ARABS, SUDANESE NEGRO, AND FEMALE SHILLUK SLAVE.

THE

# EARTH AND ITS INHABITANTS.

# AFRICA.

BY

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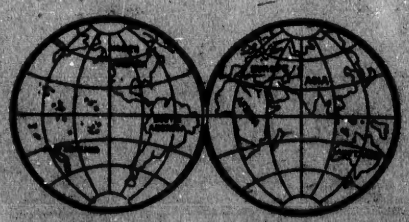
## NORTH-WEST AFRICA.



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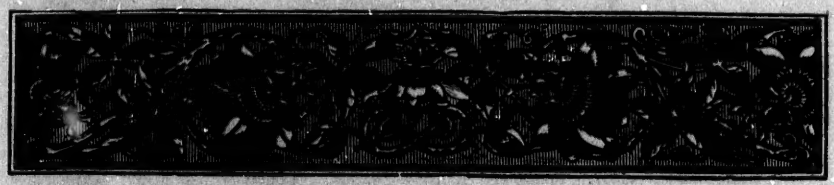

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# THE EARTH AND ITS INHABITANTS.

## NORTH-WEST AFRICA.

### CHAPTER I.

#### TRIPOLITANA.

THE portion of the African continent designated on the maps by the name of Tripolitana is a territory destitute of geographical unity. A vast region over 400,000 square miles in extent, it comprises several distinct countries separated from each other by uninhabited or even uninhabitable solitudes. Here the desert, or at least the steppes leading to it, reach the Mediterranean at the Syrtis Major. The space comprised between Cyrenaica on the east, and the Ghurian highlands near Tripoli, forms a land of imperceptible transition between the coast and Sahara zones, while the whole of Southern Tripolitana already belongs to the desert, properly so called. Here we meet with little but rocky, stony, argillaceous, or sandy tracts, except in some depressions, where a few springs afford sufficient water for man and his date-groves. Hence Tripolitana is regarded as a geographical unit rather through a political fiction than on account of its physical conditions. The whole region comprised under this name is not even politically subject to the Sublime Porte. Thus the Kufra oasis, although usually included amongst the possessions of Turkey, has hitherto maintained its independence, while in several oases lying nearer to the coast the Sultan's authority is purely nominal.

#### BARKA.

West of Egypt and its dependent northern oases stretches the Barka plateau, often called Cyrenaica, from the famous city of Cyrene, built here by the Hellenes. Politically it forms part of the regency of Tripoli, and it is consequently, at least in appearance, directly subject to the Turkish Government. But geographically it

is entirely distinct from the rest of Tripolitana, and contemporary events have shown how unstable is the present political equilibrium. It may well happen that in the near future the partition of Africa, already begun by the European Powers, may cause both Cyrene and Tripolitana to be transferred from their present Ottoman rulers probably to the Italians. Even now the *de facto* masters of the land are not those appointed by Stambul. The religious order of the Senûsiya, which was first established in Algeria, and whose capital is at Jarabûb, in the Faredgha oasis, is the true ruling power throughout the whole region comprised between the Egyptian frontier and the Gulf of Cabes. Here the Turkish officials are tolerated only on the condition of conforming themselves to the mandates addressed to them by the agents of the head of the order, and all persons invested with magisterial or municipal offices belong to this community. The summons to arms issued by the "Mahdi" of Jarabûb would even now be instantly obeyed by a regular army of infantry and cavalry, already organised independently of the Turkish Government.

The region of the African seaboard comprised between Egypt and Tripoli, properly so called, is at present of all Mediterranean lands the least frequented by European traders, and the most thinly peopled country in the basin of the great inland sea. Three hundred thousand persons at most, possibly even not more than two hundred and fifty thousand, are scattered over the space limited eastwards by the Egyptian frontier, westwards by the depression stretching from the Faredgha oasis towards the Great Syrtis, or Gulf of Sidra; that is, a proportion of less than ten to the square mile. The steamers navigating the Mediterranean in all directions seldom call at the ports on the Barka seaboard; hence this strip of coast, which extends for about 1,200 miles, from Alexandria to Tripoli, maintains scarcely any commercial relations with the outer world.

But on the other hand, the expansive power of the European nations is everywhere followed by inevitable consequences; nor can there be any doubt that Cyrenaica will again become a flourishing colony, attracting, as it did some twenty-five centuries ago, industrious settlers from Greece and Italy. The projecting coastline of Barka approaches to within 240 miles of Cape Matapan; in these waters, forming the zone of separation between the eastern and central Mediterranean basins, Africa seems, as it were, to meet Europe half-way, and it would be strange if the throbbing life of Western civilisation failed to make itself ultimately felt in this neighbouring region of the "Dark Continent."

Hitherto, however, European influence—which, following the great maritime highways of the globe, has become dominant at the Antipodes themselves—has been almost imperceptible in this Libyan land, which, nevertheless, for a period of over a thousand years, formed an integral part of the Hellenic world, the centre of ancient science and art. During the Roman period, Cyrenaica was still regarded as forming a dependency of Greece, and it even constituted, with the island of Crete, a single administrative province.

## Historic Retrospect.

On the North African seaboard the rounded mass of the plateau of Barka corresponds with the region of Tunis, which limits the Gulf of Cabes towards the west, and projects in the Carthaginian headlands in the direction of Sicily. The two territories resemble one another in their geographical position, their climate, and products. They also played their part in the history of the old world, one through its Hellenic colonies, the other through its Phœnician republic. In comparing Cyrene with Carthage, observers have dwelt on the natural advantages of the former, and have expressed their surprise that it never rose to the same pitch of commercial prosperity as its western rival. It is, however, to be observed that for the purposes of international trade Carthage really occupied a position far superior to that of the maritime cities of Cyrenaica. Forming no part of the Greek world, it did not reach the same standard of general culture; and although not lacking great thinkers, it never exercised the same influence in the development of the arts and sciences.

But on the other hand, Carthage played a far more considerable part in the commercial world. Being hemmed in on all sides by the wilderness, the plateau of Cyrene drew from the interior a very limited quantity of supplies, imported by the difficult and tedious route of the oases; hence its natural trading relations were rather with the Hellenic islands and peninsulas facing it on the opposite side of the Mediterranean. But the more favourably situated city of Carthage necessarily became the chief outlet of a vast and populous region stretching far into the interior of the continent. Almost within sight of Sicily, and standing on the great Mediterranean strait, where converge the main water highways from Greece and Spain, it commanded the central position of the whole maritime basin. Over the Greek cities it enjoyed the further advantage of being situated nearer to the "Columns of Hercules," and its vessels were the first to plough the waters of the boundless ocean.

Wasted by the Arabs, especially during their second invasion in the middle of the eleventh century, the inhabitants of Barka lost their trade and culture; the land lapsed into barbarism, its ruined cities and its burial-places became the haunts of wild beasts. The myth of Hercules and Antæus personifies the struggles of the Greek settlers against the natives of Cyrenaica, the Libyan giant drawing fresh strength from the ground each time he touched his mother, Earth. But, notwithstanding the fable, which records the victory of Hercules, it was Antæus who triumphed in the end. However, the type of the ancient Berber population does not seem still to prevail. Diversely modified by crossings with Greeks, Negroes, and Turks, the Libyan stock has been further replaced, or almost entirely transformed, by Arab intermixture. Future immigration will give the political ascendancy to the Europeans; but the local element will doubtless always remain the most numerous here, as elsewhere throughout North Africa.

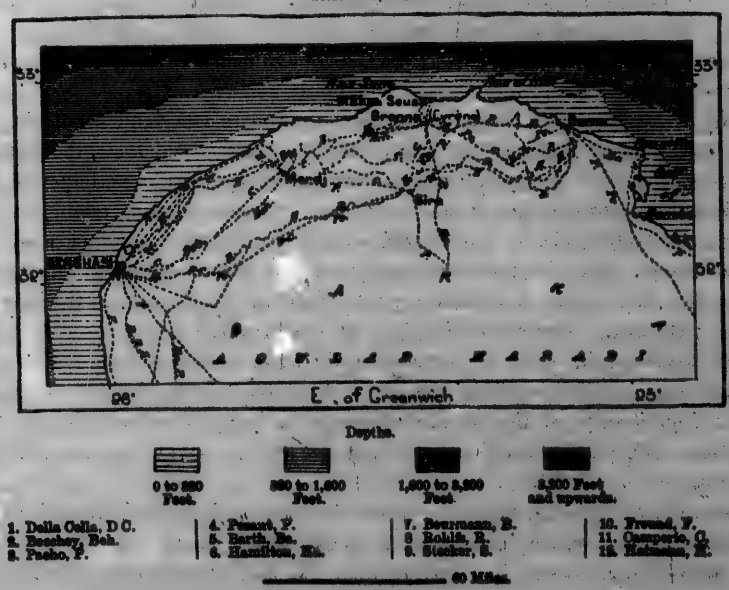
The pending annexation of Cyrenaica to the cultured world has already been sufficiently prepared by the researches of modern explorers. At the beginning of

the eighteenth century the French traveller, Lemaire, was already studying the ruins of the old Greek cities. Sections of the seaboard were surveyed by Paul Lucas, Shaw, Bruce, Granger, while in 1811 and 1817, the Italians Cervelli and Della Cella penetrated into the interior, and for the first time recorded systematic observations on the soil, climate, products, and antiquities of the country.

Then came the brothers Beechey, who occupied themselves chiefly with the maritime districts, and the artist Pacho, whose attention was directed mainly to the ruined cities of the plateaux. Cyrenaica was also traversed by Delaporte, De Bourville, Barth, Hamilton, De Beurmann, Gerhard Rohlfs, Murdoch Smith, and Porcher, and of late years it has been successively visited by a great many travellers,

Fig. 1.—Routes of the Chief Explorers in Cyrenaica.

Scale 1 : 8,500,000.




astronomers, geographers and naturalists, nearly all of whom were sent by the Italian Society of Commercial Exploration in Africa. The chief objects of these continuous visits is to prepare the way for the political occupation of the country by the kingdom of Italy.

## Physical Features of Barka.

Between Egypt and the territory of Barka there are no natural frontiers. The hills and plateaux, skirting the north side of the Siwah oasis, are continued westwards, rising gradually into terraced uplands, which, beyond the Gulf of Soloûm, or Mellah, acquire the dignity and title of jebal (mountains). Here is the

starting-point of the line of demarcation officially laid down between Egypt and Tripolitana. The headland commanding the Gulf of Soloûm was ever regarded by Sallust, Pomponius Mela, and other ancient authors as the angular limit between Africa and Asia, Egypt being considered by them as belonging to the eastern continent. At this point the highest summits of the plateau exceed 1,000 feet, and the coast route has to surmount a projecting ridge by means of a graded track, whence the promontory, as far as the Ras-el-Melah, took its Greek name of Katabathmos Megas, or "Great Descent." At present the Egyptian Arabs give it the title of Akabet-el-Kebir, or "Great Ascent," and to El-Edrisi it was known as the Akabah-el-Soloûm, or "Graded Ascent," whence the present name of the neighbouring gulf. It is easy to understand how seafarers and caravan traders at all times looked upon these abrupt declivities, and the deep indentation formed by the Gulf of Soloûm, as a natural limit, although farther inland the plateau is continued on either side without any great differences of level.

From the Gulf of Soloûm to the great bend, whose western extremity is occupied by Benghasi, the seaboard is divided into two nearly equal sections by the so-called Gulf of Bomba, which is limited westwards by the Ras-et-Tin, or "Fig-tree Cape." East of this deep inlet, already marked out as the site of a future naval station analogous to that of Spezia, the coast district coincides with the ancient Marmarica, or Marmaridis; to the west is developed in a graceful curve the shore-line of Cyrenaica, properly so called. The two territories are clearly separated by the bed of the Wady Temmîm, which, however, is dry for several months in the year. Some 60 miles long, it is the only torrent in Barka which is anything more than a mere ravine, flushed only for a few hours after each rainfall.

On either side of this intermediate depression, the heights present different natural features. The Miocene plateau of Marmarica has an average elevation less than half that of Cyrenaica, and its depressions, nearly all parallel with the shore, are mere folds in the rocky surface rather than true valleys. In the west, on the contrary, the hills of Cyrenaica constitute a veritable highland, the so-called Jebel Akhdar, or "Green Mountains," some of whose crests exceed 3,300 feet in altitude. This term, however, is more specially restricted to the western group of uplands, which, notwithstanding their rounded outlines, bear a closer resemblance to the Apennines than any other African district. The same trees overshadow the same undergrowth; a mean temperature differing little from that of Italy prevails over hill and dale; the breeze wafted over the thickets is charged with the same perfumes; the same blue waters sparkle at the foot of the escarpments. Travelling across the land of Barka, visitors from Italy fancy themselves still surrounded by the scenery of their native homes.

The Greeks also had converted this region into an African Hellas. In their enthusiasm here they placed the first of those "Gardens of the Hesperides" which their daring navigators, pushing still westwards, had scattered, so to say, from Cyrenaica to the utmost verge of the mainland. The Arabs in their turn bore testimony to their admiration for its natural beauties, by the title of "Green Mountains," which they gave to the Barka highlands. Whether they arrived from

the south-east or west, they had still to traverse bare and waterless solitudes. Hence, the sudden contrast naturally caused them to regard as earthly Edens the green slopes and purling brooks of these pleasant uplands.

The plateau of Cyrenaica is largely indebted for its inviting aspect to the graceful outlines of its hills, which develop their highest summits in the very neighbourhood of the seaboard. The coastlands, in some places presenting the pink tint of the corals which form about a third of the whole mass, are skirted by tracts sloping gently to the foot of the vertical cliffs, or abrupt rocky walls broken by narrow gorges, through which wind the paths obliquely scaling their steep sides. Above this limestone pedestal tower the crests of the Jebel Akhdar, beyond which the traveller finds himself already on the verge of the desert. Here the beds of dry wadies open southwards; to the wooded hills succeed the *serirs*, vast stony wastes, or extensive plains clothed with a scant vegetation of alfa and other grasses.

The colour of the soil changes with its relief. The Barka highlands are covered with a reddish humus, whence the designation of Barka-el-Hamra, or "Barka the red," applied by the Arabs to this region. But southwards the fertile red clays of upper Cyrenaica gradually merge in the grey and white tints of the sands and bare rocks characteristic of Barka-el-Beïda, or "Barka the white." Still farther south, where the arid soil no longer supports the scantiest vegetation, the desert wastes bear no geographical name. Here nothing meets the eye except the shifting dune, rock, or hard clay wearily traversed by caravans, whose track is marked only by wells of brackish water, occurring at long intervals.

### Climate of Barka.

The northern section of Barka, beyond the serirs and dunes of the "white" region, enjoys an Italian climate. At sea-level the normal annual temperature ranges from 70° to 73° F., according to the latitude—an isothermal mean several degrees above that of Southern Italy. But on the uplands, exposed to cooler marine breezes, the temperature falls to the level of that of Sicily and Naples. On the plateaux of Cyrene, 1,600 feet high, the heat during the day varies from 54° F. in winter to 84° in summer.* At night the temperature, although considerably lowered by the effects of radiation in a cloudless sky, seldom falls to the freezing-point.

Altogether, for its soft and equable climate, Cyrenaica stands almost unrivalled. Here the traveller rarely suffers from the extremes either of heat or cold. He may also easily change from one zone to another, for the plains, plateaux, and highlands are all alike clothed with that rich red humus on which flourish all the cultivated plants of temperate regions. As long ago pointed out by Herodotus, "the territory of Cyrene has three admirable seasons. The coastlands abound in fruits which first arrive at maturity. Then follow the harvest and the vintage, and the crops are scarcely garnered when the fruits on the hills are ripe enough to be gathered.

* Hamilton, "Wanderings in North Africa."

Then those of the culminating region reach maturity, so that the first harvest is consumed when the last arrives. Thus for eight months the Cyreneans are always harvesting." *

"Red" Barka belongs to the Mediterranean zone of winter rains, although it is also frequently refreshed with autumn showers. Its almost insular position exposes Cyrenaica to all the moisture-bearing winds, except those from the south and south-east; and the humidity being arrested by the lofty heights, often descends in copious rains. At times the torrents rushing through the mountain gorges down to the coast towns have converted into mud and swept away the hovels, and undermined the more substantial dwellings. Still the yearly rainfall is less than in most European countries, ranging, according to Fischer, from 14 to 20 inches, or from half to two-thirds that of France. From Alexandria to Cyrene it increases gradually westwards. Much, however, of the rain water disappears at once in the fissures of the limestone ground, and is thus lost for the higher lands. But lower down it reappears on the plains, welling up in copious springs at the foot of the cliffs. In many places, and especially in the vicinity of Benghasi, west of the Jebel Akhdar, the subterranean waters would reach the coast through hidden channels, if the ancients had not contrived to arrest their course and bring them to the surface.

In spite of the rains which fall on the uplands, Cyrenaica has not a single permanent stream, while "White" Barka, the region of sands and bare rocks, has nothing but its waterless wadies, and at long intervals a few wells from which oozes a brackish fluid.

## Flora and Fauna of Barka.

The vegetation, being regulated by the quantity of rain water, either received directly from the clouds or filtered through ground in flowing streams, naturally increases in exuberance in the direction from east to west. A careful exploration of the district about the port of Tobruk, in Marmarica, yielded to Schweinfurth not more than two hundred and twenty plants, whereas Ascherson has enumerated as many as four hundred and ninety-three for Western Cyrenaica. The upland region of the plateau, where the rain escapes rapidly through the surface fissures, offers little beyond greyish species, whose scanty foliage is parched by the summer suns. Here and there the monotony of the barren wastes is broken by a stunted acacia or a solitary turpentine-tree. But on all the slopes and in all the depressions, where the rain water is retained for any length of time, the laurel, elder, myrtle, mastic, eglantine, and other southern shrubs cluster round the evergreen oak and tall cypress, of freer growth than those of Italy, and rising at times to a height of over 160 feet.

These dense thickets of trees and shrubs, which never lose their verdure, explain the designation of Jebel Akhdar, the "Green Hills," applied by the Arabs to the highest uplands of Barka. The forest trees no longer supply much more than fuel

* Book iv., p. 199.

and timber for the coast towns. But in former times the thuyas of Cyrenaica were used to make those costly "tiger" and "panther" grained tables, which were so highly prized by the Romans, and the exquisitely perfumed wood of which was supposed to have been employed by Circe in her incantations.

The slopes facing seawards are clothed with forests of the wild olive, whose branches are shaken for the berry, greedily eaten by sheep and goat. The carob, when allowed to grow in the open, throws off such a mass of young sprouts that whole families of Bedouins take up their residence during the summer months beneath this vast canopy of verdure, sheltering them from all eyes. Like the streams of Greece, the wadies of Barka are fringed with oleander plants; dwarf palms grow in clusters along the sea-coast; fruit-trees of the Italian zone, dominated here and there by the tall stems and branches of the date-palm, flourish in the well-watered gardens now usually surrounded with hedges of the "Barbary fig," an immigrant from the New World, which has already become so common in the Mediterranean flora.

Some of the fertile valleys opening seawards are stocked with as many species of plants as the ancient "Garden of the Hesperides" itself, described in the *Periplous* of Scylax. This marvellous land was situated according to Pliny near Berenice; but Scylax states expressly that it was not far from the Ras-Sem, the Phycus of the ancients, that is, the northernmost headland of Cyrenaica. According to the description of the Greek writer, it occupied a natural gorge or an ancient quarry, like the *latomia* of Syracuse. The brothers Beechey believed they had discovered its site amid the now flooded precipices to the east of Benghasi, but none of these present the dimensions of the garden as described by Scylax. Some idea of its exquisite beauty may be had by visiting the chasms now filled with verdure which open abruptly in the stony plateau near Syracuse. Orange, citron, medlar, peach trees, all struggling upwards towards the blue vault of heaven, rise to heights of from 50 to 60 or 70 feet. The stems of the trees are enclosed by leafy shrubs, their branches entwined by wreaths of creepers, the paths strewn with flowers and fruits, the foliage alive with song of birds. Above this elysium of fragrant and flowering plants rise the grey rocks, here and there clothed with ivy, their every crest crowned with verdure.

The *silphium*, or *laserpitium*, at one time one of the main resources of Cyrenaica, and whose very name had passed into a proverb implying the most precious of treasures, is now found only in the wild state on the cliff, if indeed it is the same plant. The old writers tell us that it had already disappeared in their time, and amongst the modern observers, Schroff, Oersted, Ascherson and others, have expressed the opinion that the plant so highly valued by the Greeks and Romans for its curative virtues, was a species of asafœtida. Nevertheless most naturalists accept the hypothesis of Della Cella, the first explorer of the country, who supposes that the silphium was the *drias* or *adrias* of the natives—that is, the *Thapsia garganica* of botanists. The Cyrenian coins represent this umbellifer with sufficient accuracy, although its form is somewhat enlarged and its fruit of somewhat too cordiform a shape. Like the hardened sap of the silphium, which

fetched its weight in silver, and which was preserved in the State treasury, the liquid extracted from the present adrias is regarded by the natives as a panacea, and is employed especially in the treatment of wounds inflicted by animals.

In Europe the researches of Heinrmann have also proved that this plant should be accepted in the modern pharmacopœa, on account of its purifying properties. No apparent difference can be discovered between the Algerian and Cyrenian thapsia garganica; yet some difference there must be, seeing that the Algerian species has scarcely any curative virtues. On the other hand, camels may browse on it without danger, although the drias of Barka is fatal to them, as was formerly the silphium.*

At present the land of Barka contributes but little to the general increase of wealth in the world. It no longer exports either medicinal drugs, the essence of roses, or the white truffles for which it was formerly renowned. Wheat, barley, cucumbers, tobacco, a few vegetables form, with the garden fruits, the only products of the local agriculture. The wild bee gathers an exquisite honey from the flowering plants. Tillage is in a rudimentary state; nor do the wonderful crops of wheat mentioned by the ancients as yielding a hundred and even three hundred-fold, appear to have been witnessed in modern times. Occasionally want even prevails, and as a rule about every fifth year is unproductive. The slopes of the Jebel Akhdar are best adapted for the cultivation of the olive, and the oil supplied by the few olive-groves farmed by the Italians is of excellent quality.

However rich in vegetation, the "Green Mountains" are extremely poor in animal species. The only wild beasts here seen are the hyæna and jackal. But the thickets of the depressions are infested by the wild boar, while the gazelle, hare, and rabbit, abound on the plateau. Reptiles, birds, insects, belong almost exclusively to the same species as those of Mauritania. The budding vegetation is occasionally devoured by the locust, and the wild bee deposits its burden of honey in the fissures of the rocks.

Southwards this scanty fauna gradually diminishes, until it disappears altogether beyond the zone of oases. After crossing the Wady Fareg, the traveller discovers that he is no longer accompanied even by the flea. He no longer crushes a shell under foot, or perceives a single bird on the wing. In the villages and encampments of Barka the domestic animals differ in no respect from those of Mauritania. There as here they are still the ass and mule, sheep, goats, and horned cattle. The horses no longer belong to that superb race described by Pindar, when singing of Cyrenaica famed for its "fine steeds." But if small, heavy, and ungainly, they are at least sure-footed and endure hardships well.

## Inhabitants of Barka.

The land of Barka is peopled exclusively by Arabs of more or less mixed stock, who, however, claim to be of pure descent, and who speak the language of the Prophet according to the Egyptian standard, slightly affected by Maugrabian

* Hamelt, "Explorations," vol. v., 1881.

elements. No feature in their physical appearance seems to betray any trace of Hellenic or Roman blood, while the Berber type here so closely resembles that of the Arabs, that it would be difficult to distinguish the races in so mixed a population.

In Derna, Benghasi, and other towns subject to the influences of external commerce, the usages differ little from those of the Egyptian Arabs, and the women do not appear unveiled in public. Here, also, the inhabitants are grouped, not according to their tribes, but according to their trades and pursuits. But in the rural districts distinct territories are occupied by the *ailets*, a term collectively applied to all the tribes of Cyrenaica. The Aulad-Ali of the Egyptian Libya are encroaching from the west on the Barka highlands, where they already possess extensive grazing-grounds. Here they are replacing the Marmaridæ, who gave their name to the country under the Ptolemies, and who subsequently followed the general movement of migration and conquest in the direction from east to west.

The Zwiyas lead a wandering life in the section of the plateau in the vicinity of Derna, whence they descend southwards as far as White Barka, south of Benghazi. The more numerous Abeidats, jointly with the Berâsa, the Hasa and Dorsa, occupy the districts of the Jebel Akhdar, lying east and west of the ruins of Cyrene. The Eshtek dwell in the western part of the range above Benghasi, while immediately north and south of them are the camping-grounds of the Bragtas and other clans of the Awaghirs, the most powerful of all the Barka tribes. This ailet is said to be able to muster in war time altogether 10,000 infantry and 1,000 horsemen. The Harabi, Mogharba, and other less important tribes occupy the lower terrace lands comprised between the Barka highlands and the desert.

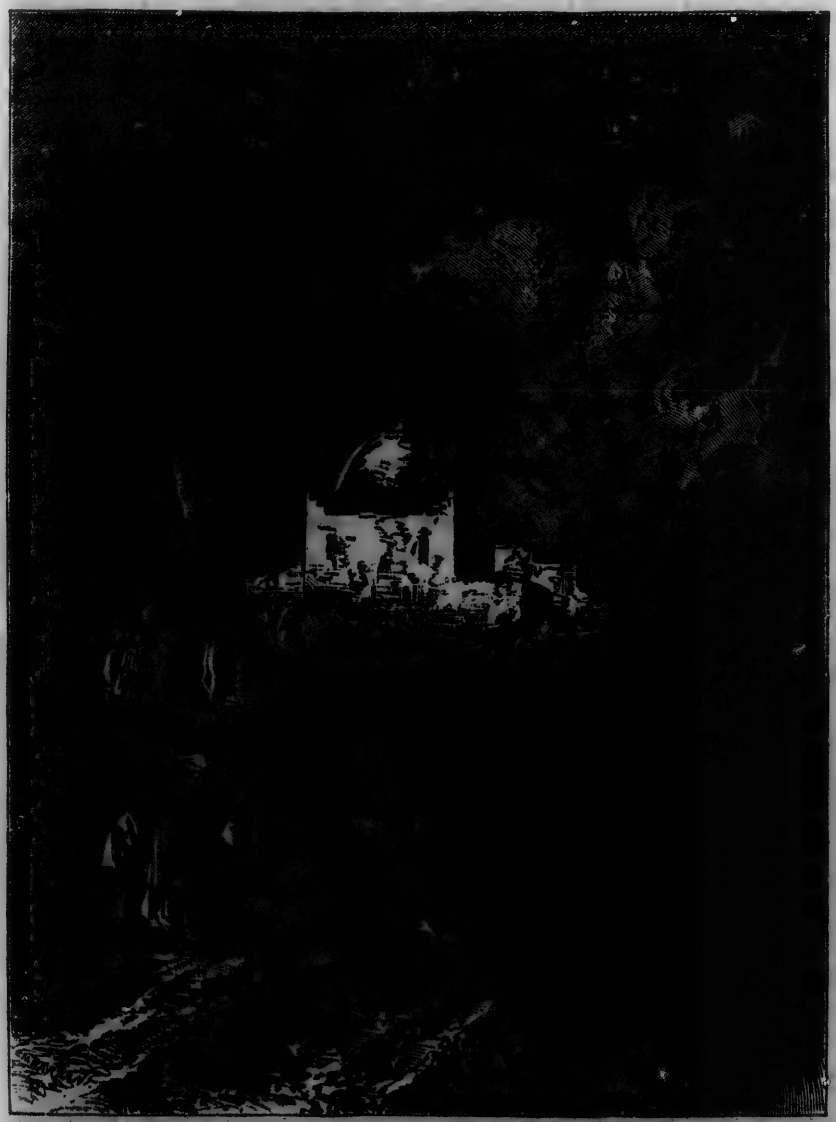
All these Libyan Arabs are fond of painting the breast, arms, and face with antimony. The women, who never go veiled, always dye the lower lip black, and encircle the eyes with the same extract of *kohoul*. Both sexes wear the *hauli*, a kind of toga, to which Europeans give the name of *barakan*. During youth the daughters of Cyrenaica are comely, but proportionately much smaller than the men. The national diet is a species of "barley-bree," known as *basina*. It was amongst the Arabs of Merj, the ancient Barké, that the "bubonic pestilence" broke out in the year 1874, and Cyrenaica is said, with the West Persian highlands and those of Asir, in Arabia, to be one of the three regions where this disorder is endemic.

Since the middle of the present century, thanks especially to the establishment of the order of the Senûsiya in this part of Tripolitana, the Arabs of Barka have certainly made some progress in material culture and moral cohesion. Manners have undergone a great change, and certain questionable laws of hospitality described by all travellers from Herodotus to Barth are no longer practised. On the other hand, the natives have become less kindly and cheerful, more sullen and surly to strangers.

In the year 1843, the Algerian Sheikh Semusi el-Mejahiri, being compelled to

quit Mecca, where he had made some powerful enemies by his mode of life and his rigid principles, sought a temporary refuge in Benghazi. Then he founded at

Fig. 7.—Zawya of Masuna, in the Algerian Dahra.



el-Beida, west of Cyrene, a first *zawya*, at once a monastery, mosque, school, hospital, military stronghold, and centre of culture. Other fugitives, mostly Algerians, like

the "saint," who summoned them to follow the "way of salvation," flocked to his standard and were well received. New monasteries were established in other parts of the country, and their inmates soon exchanged the character of guests for that of masters. They soon became so powerful that already in 1851 the traveller Hamilton had to defend himself against their fanatical followers. At present the most important person in the province of Barka, and even in Benghasi, where the flags of the European consuls are hoisted, is not the mutessarif, appointed by the Sultan, but the wakil, or agent of the Sheikh of the Senûsiya, to whom the Government has even granted the right of exercising justice. In the district over 25,000 cavalry and infantry are at his disposition, over and above the *Khwan*, or brethren and their retainers, who reside in the twenty zawyas scattered over Cyrenaica. Everywhere are met slaves and animals branded with the name of Allah, the mark of the brotherhood.

Yet the Sheikh himself no longer resides in the country. In 1855 he prudently withdrew beyond the range of European influence to the Faredgha oasis, which, although officially belonging to Egypt, lies on a borderland surrounded by solitudes, where neither sultan nor khedive exercises any authority. Here he first took up his abode in a necropolis excavated in the live rock. But in his capital, Jarabûb, he is now master of convents, barracks, arsenals, depots and other extensive structures, which are mirrored in the brackish waters of Lake Faredgha. Here is the centre of the religious empire, which stretches on the one hand as far as Senegal, on the other to Mesopotamia, comprising not less than 1,500,000 subjects, all "in the hands of their Sheikh, as the body is in the hands of those who lay out the dead."

The son of the founder, who succeeded him in 1859, has become the undisputed head of the sect, blindly obeyed by all the Khwans of the Moslem world, who see in him the Mahdi, the "guide," or rather the "well guided," destined to restore the power of Islam. Doubtless the Senûsiya aspire outwardly to no special political aim; their ideal is to confederate all the orthodox religious orders in a single theocratic body, independent of all secular authority. They discountenance violence, and recommend to their oppressed brethren, not revolt, but voluntary banishment from the districts subject to Christian sway, and withdrawal to the independent zawyas. But while ostensibly condemning political agitation, the Senûsiya none the less aim at absolute independence, and their compact organisation has rendered them far more formidable enemies than many restless tribes always ready to revolt. The Mussulman solidarity has brought them more conquests than they could have hoped to achieve by arms. Thus they have already secured Wadai by ransoming a gang of slaves *en route* for Egypt, and sending them back to their homes as missionaries of the holy cause. At present the Sultan of Wadai is a mere lieutenant of the Mahdi of Jarabûb, and all his subjects are affiliated to the order.

But it is probable that evil days are in store for these zealous Panislamists, and that their troubles will begin as soon as European influences make themselves directly felt by the open or disguised occupation of the land of Barka. The official sway of the Turk and secret authority of the Senûsiya run the risk of a joint

collapse. During recent years the faithful adherents of the order, and especially the citizens of Benghazi, are said to have relaxed considerably in the rigour of their religious professions. It is no rare sight to behold members of the confraternity openly violating the observances of the law by smoking tobacco and wearing silken garments embroidered in gold and silver.

## Topography of Barka.

The attention of the European Powers is directed especially to the local seaports, which could be defended by no native force, and the possession of which would enable them to command all the routes leading to the interior. In the eastern district of Marmarica the port of *Marsa Tobruk*, known also as *Tabarka*, seems to present the greatest advantage as a convenient naval station and arsenal. At this point a peninsular mass running parallel with the coast in the general direction from north-west to south-east, terminates at its eastern extremity in two sharp headlands, and at the other end is connected with the mainland by a low isthmus. An inlet some two miles long is limited northwards by this peninsula, and southwards by the cliffs and escarpments of a plateau furrowed by ravines, in which are occasionally seen the foaming waters of cascades some 500 feet high. Vessels drawing over 33 feet can ride in perfect security in this spacious natural haven, sheltered from all winds except those from the east and south-east. A breakwater constructed at the entrance of the bay might arrest the swell from the east, and thus convert the port of Tobruk into one of the best and at the same time one of the largest harbours of refuge in the Mediterranean basin.

The ruins either of *Antipyrgos* or some other Greek city at the neck of the peninsula, and those of a Saracenic castle on the north side of the port, show that this convenient harbour was never lost sight of, although the surrounding regions are almost desert wastes. In former times Tobruk was probably the station where pilgrims landed *en route* for the shrine of Jupiter Ammon in the Siwah oasis. It was also a port of call for vessels plying between Rome and Alexandria. At present it serves as the outport for cattle supplied by the neighbouring pastoral tribes to the markets of Alexandria, and especially of Jarabûb and the other zawyas of the Senûsi Khwans.

Round the bay of Tobruk Schweinfurth has detected signs of local upheaval. At a height of 160 feet and a distance of nearly half a mile from the beach, he noticed the shells of the surrounding waters still preserving their natural colour. At some points farther west, near Cyrene and Benghazi, Hamilton thought he observed traces of the opposite phenomenon of subsidence.

The Gulf of *Bomba*, more frequented than the Bay of Tobruk by the small local coasters, enjoys the advantage of being situated immediately east of Cyrenaica proper, in the vicinity of a fertile and relatively well-peopled district. But it is much more exposed than Tobruk, and less accessible to large vessels, which are obliged to cast anchor a long way from the coast; small craft, however, find safe anchorage behind the islets at the entrance of the bay.

The so-called "port of *Menelaus*" lies to the north of the roadstead. But it comprises merely a small group of huts, and all the old Hellenic towns of the district have disappeared, almost without leaving a vestige by which to determine their sites. The establishment of a European colony, often proposed in the Italian press, would be greatly imperilled by the malaria prevalent on the coast, where the Wady Temim loses its waters in stagnant pools. In this district the marine in-

Fig. 3.—Tobruk.

Scale 1 : 65,000.

shore current, which sets from west to east, when not obstructed by the winds, has a mean velocity of nearly two miles an hour.

To reach *Derna*, the ancient *Darnis*, the first town on the east coast of Barka, the traveller must skirt the north foot of the red escarpments of the Ras-et-Tin, and follow the north-west coast for a distance of 30 miles. This place, which was re-occupied in the sixteenth century by Andalusian Moors, comprises a group of five villages, or distinct quarters, divided into two sections by the bed of a torrent. Every house is here surrounded by a trellised vine, or overshadowed by a date-

palm, beneath which the family gathers after the day's work. Of all the gardens of Cyrenaica those of Derna best deserve the old name of the "Hesperides." Watered by two streams flowing from the neighbouring hills and ramifying in a thousand channels, the dense foliage of their verdant groves presents a striking contrast to the grey and bare rocks of the ravine. They yield figs, grapes, dates, oranges, citrons, and choice bananas, which with the wool, corn, wax, and honey brought from the interior, the sponges fished up in the neighbouring shallows, and some woven goods of local manufacture, contribute to maintain a small export trade. The olive groves, which date from Roman times, no longer yield any products, and should be replaced by fresh plantations.

The merchants of Derna keep up some relations with Benghazi, Malta, Canea, Alexandria, employing vessels of small tonnage, which cast anchor at some distance from the town in a roadstead exposed to all winds except those from the west and south. During the rough weather in winter, they seek shelter in the Gulf of Bomba. In 1815, when the United States sent an expedition against the corsairs of Tripoli, a detachment of marines seised Derna, and erected a battery to the west of the town, the remains of which are still visible. The Americans also began to construct a harbour at the mouth of the ravine; but their stay was too short to complete these works, and since then no further improvements have been attempted. The place has even fallen into decay, and in 1821 the plague is said to have reduced the population from 7,000 to 500. A large portion of Derna was at that time abandoned, and since the beginning of the century it has lost fully one-third of its inhabitants.

West of Derna the first harbour occurring along the coast still preserves, under a slightly modified form, the name of "Port Saviour," given to it by some Greek authors. This is the *Marsa Susa*, or *Apollonia*, of the Ptolemies. Thanks to its small harbour well sheltered behind a chain of islets and reefs, Susa at one time enjoyed considerable importance, as is attested by the remains of monuments still visible within the circuit of the old walls, and beyond them on a narrow chain of rocks running eastward. But the port has mostly disappeared, probably through the effects of a local subsidence, by which the coastline has been considerably modified. Ancient tombs and quarries are now found below the level of the Mediterranean, like the so-called "baths of Cleopatra" at Alexandria.

## CYRENE.

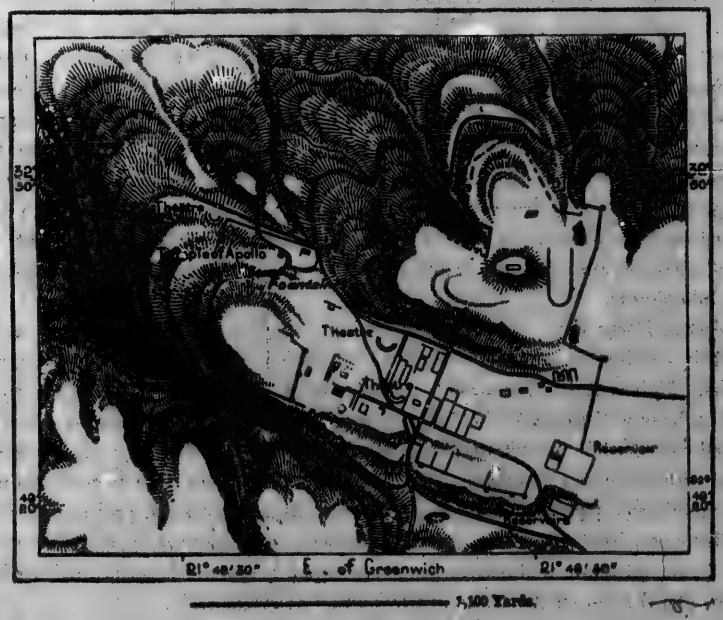
Apollonia, however, never enjoyed an independent existence, having been merely the marine quarter of the far more famous *Cyrene*, which stood about 10 miles to the south-west, on the verge of the plateau, whence a view was commanded of the plains stretching away to the coast. It is easy to understand why the Dorians of Thera, who founded Cyrene "of the Golden Throne" over twenty-five centuries ago, abandoned their first settlements on the coast and selected this more elevated inland position, although they had at that time nothing to fear from the incursions of pirates. From this commanding point they were better able to over-

awe the populations of the uplands on whom they depended for their supplies; here also they found a fertile soil, abundance of timber, and especially a copious fountain, whence the city itself took its name, and which, like the marine station, was consecrated to Apollo.

In the eyes of the natives the chief glory of the ruined city is still this perennial source welling up at the foot of the cliffs. Hence *Krennah*, the little-used Arabic form of Cyrene, has been replaced by the expression *Ain-esh-Sheĥad*, the "eternal spring," which has also been applied to the surrounding district. Nevertheless the quantity of water has diminished not only since ancient times, but even since the beginning of the century, as is sufficiently evident from the marks left

Fig. 4.—Cyrene.

Scale 1 : 25,000.




on the rock above the present level of the stream. The cliff whence it flows to the surrounding thickets had been carved into the shape of a wall, on the white surface of which are still visible the traces of the roof of a temple, which sheltered the stream at its outlet in the mountain. The gallery whence it escapes has been artificially excavated for a distance of about 440 yards; but Europeans were long prevented from entering it by the natives, who pretended that it led to a wheel set with knives continually revolving, and guarding the approach to a treasure.

Besides the great fountain associated with the myth of Cyré, daughter of the king of the Lapithæ, Cyrene possessed other springs, such as that by the Arabs now called Bu-Gadir, or "Father of Verdure," which flows through a wooded dale

to the north-west. On the plateau the colonists also excavated a cistern, one of the

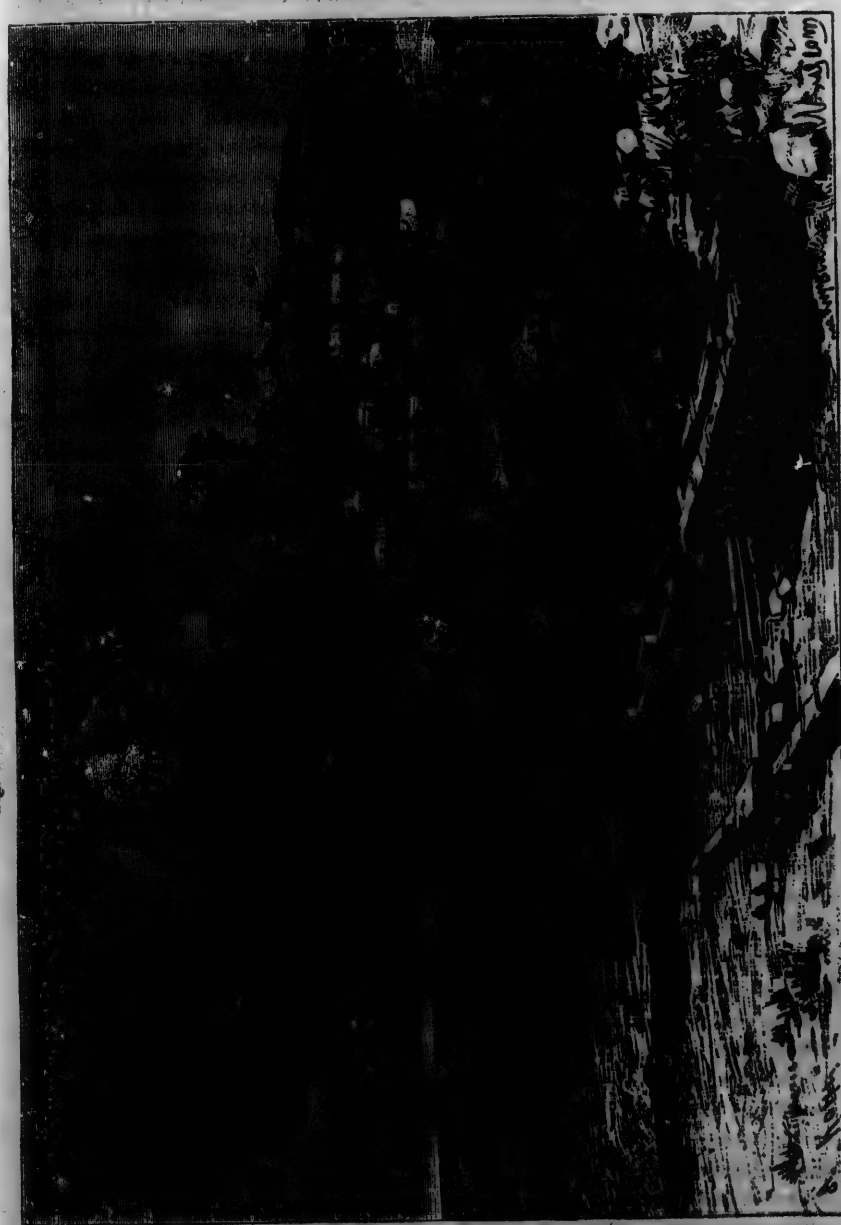


Fig. 4.—View from the Necropolis of Cyrene.

largest and best constructed that have survived from ancient times. On a still

more elevated terrace south-east of the ruins stands another cistern, that of Safsaf, which has the form of a canal about 300 yards long. Throughout its entire length it is faced with enormous slabs measuring nearly 20 feet.

Cyrene, whose name has been applied to the whole region, preserves a few remains of the monuments erected during its flourishing period, when it held the Libyans in check, presented a bold front to Egypt, and diffused Greek culture far and wide throughout the African Continent. Aristotle wrote a history of Cyrene, which has since been lost, and amongst its famous citizens were such men as the philosopher Aristippus, the poet Callimachus, and the astronomer Eratosthenes. Since the time of Pacho, the first European traveller who visited the place in the present century, the ruins have become less distinct, and many sculptures have been carried off. But the sites may still be recognised of temples, theatres, the stadium, colonnades, and the walls enclosing a portion of the plateau, with a circumference of about 6 miles. Towards the plain the ground occupied by these remains terminates in escarpments, separated by abrupt and deep ravines. In many places the rock had been levelled and the intermediate fissures filled in to secure more convenient foundations for the public buildings. The plateau is traversed by routes still furrowed by the ruts of chariots.

But what most surprises the traveller is the vast city of the dead, which encircles that of the living on the west, east, and south, for a distance of several miles. Cyrene would appear to have been, above all, a vast necropolis, in this respect rivalling all other Hellenic towns. The neighbourhood and subsequent sway of the Egyptians had evidently influenced the Greek settlers, who instead of burning the dead, buried them in caves and tombs. In certain ravines the yawning mouths of these sepulchral caverns are seen in thousands, and here and there the traces may still be distinguished of their polychrome decorations.

Most of the tombs rest on crypts cut in the limestone cliff, which being of a porous nature, was easily worked, and thus converted into a vast underground city. A monastery of the Senûsiya brotherhood has even been established in one of the great mausoleums of Krennah. At the foot of the spurs projecting from Cyrene on the route to Apollonia, large storehouses had also been excavated in the rock, which may have afterwards served as tombs. Of the old route itself nothing but a few traces has survived. Smith and Porcher had it partly restored, or rather had a new road built for the purpose of transporting the fine sculptures collected by them for the British Museum. But this work met with little favour from the natives, who reflected that a good highway gives ready access to troops and to the tax-collector.

Some 60 miles to the south-west a depression in the plateau about 18 miles long and from 6 to 7 broad, is known to the Arabs by the name of *Merj*. Here nothing is visible except a solitary palm-tree, serving as a familiar landmark to the wayfarer. But on the old lacustrine bed stands the site of the ancient city of Barké, which was first the Hellenic rival of Cyrene, and afterwards the first in rank of the "five cities" whence the country received its name of Pentapolis. It marks the extreme western point of the continent reached by the Persians under Darius four-

and-twenty centuries ago. The Greek Barké became the *Barka* of the Arabs, and, like Cyrene, gave its name to the whole region from the Egyptian frontier to the Greater Syrtis. Although, unlike its rival, possessing no imposing ruins of the Hellenic period, it enjoyed great importance during mediæval times, as the chief military station for the Arab expeditions between Alexandria and Tunis. At that time it was the centre of a large trade in provisions and supplies of all sorts. But of those prosperous days Barka has preserved nothing but the ruins of a castle, and some extensive cisterns, which were needed to husband the water, the place being destitute of the perennial springs found at Cyrene.

Under the Ptolemies Barka was eclipsed by its marine neighbour, *Ptolemais*, a name still surviving in the slightly modified form of *Tolmitah*. The town itself has disappeared, but traces remain of several edifices, and of its enclosures, which had a circumference of over 4 miles. Other ruins are occupied by the Agail tribe, a Marabut community, which through professional jealousy long resisted the Senûsiya propaganda, but was at last compelled to yield. Although nearly choked with sand, the port still affords good shelter to small craft. As far as Benghasi, over 60 miles to the south-west, no other inlet along the coast offers equal facilities for landing.

The ancient *Teukhera*, another seaport, which with Cyrene, Apollonia, Barké, and Hesperides formed one of the five cities of Pentapolis, has preserved its name under the Arabic form of *Tokra*. But the official titles of *Arsinoe*, and *Cleopatris*, by which it was known under the Ptolemies, have long been forgotten. Here are neither temple nor port, and little beyond a few huts and some tombs in which the Arabs reside during the summer; but the walls are amongst the best-preserved ramparts bequeathed to us by antiquity. Although rebuilt by Justinian, they stand on far older foundations, several fragments dating from the Macedonian epoch. These magnificent enclosures are flanked by twenty-four square towers.

## Benghazi.

*Benghasi* is the modern representative of *Euhesperides*, *Hesperides*, or *Hesperis*, so named probably because it was situated to the west of the region of Cyrenaica. Later it took the name of *Berenice*, in honour of the Cyrenian princess married to Ptolemy Evergetes; while its present designation comes from a "saint," whose tomb stands on the sea-coast a little to the north.

Benghasi, capital of the province of Barka and of all eastern Tripolitana, occupies the whole site of the ancient Hesperides, except a portion of the headland crowned by the castle, which was washed away by the waves, the *débris* contributing to fill up the old port. The town lies at the southern extremity of the rocky promontory enclosed south and west by the sea. Eastwards stretches a salt lake which, even during the historic period, still formed part of the Mediterranean, and which, in stormy weather, is even now occasionally encroached upon by the waves. In summer it presents nothing but a muddy bed covered with saline efflorescences. The isthmus between lake and sea is commanded by an eminence supposed to be

the island mentioned by the ancient writers as standing in the middle of the harbour and crowned by a temple of Venus, now replaced by the tomb of a Marabut. Other lakes or morasses stretch north and south, separated from the Mediterranean by a narrow strip of coastline. Yet Benghasi is less insalubrious than most other

Fig. 6.—Benghasi.

Scale 1 : 80,000.

places on this seaboard, thanks to the winds which carry off the miasma rising from the surrounding lagoons. But the houses swarm with insects, and Benghasi is proverbially known as the "kingdom of flies."

Being in constant relations with the oases of the interior, whence, till recently,

a continuous stream of slaves flowed to this point, the capital of Barka has a very mixed population, in which the Negroes are strongly represented amid the descendants of Berbers and Arabs. The Jews, remarkable for their beauty, also form a large section of the inhabitants of Benghasi. Settled in the country from a time anterior to their own traditions, they descend, probably, from those Hebrews who, under the Ptolemies, emigrated to Berenice with their national constitution and rulers, and who afterwards became powerful enough to revolt and massacre the Greeks. Immigrants from Mauritania are also numerously represented in Benghasi, since the moral conquest of the land has been achieved by the religious order of the Senûsiya, who govern indirectly through the tribal chiefs and Turkish officials. Lastly, the European colony, chiefly formed of Maltese, Italians and Greeks, is yearly increasing in importance, already numbering about 1,000 in a total population of 15,000.

Benghasi is no longer the agglomeration of mud and straw huts described by the few European travellers who visited the place about the beginning of the century. It now boasts of solid two-storied stone houses, a lighthouse, some religious edifices, such as mosques, churches, and synagogues. But of the past not a single trace remains, beyond a few blocks here and there indicating the position of quays and piers. But from the ground have been recovered valuable sculptures, vases, inscriptions, medals, a large share of which was secured for the Louvre by the explorer Vattier de Bourville. Recently a few improvements have been made in the port, which, however, during the last two thousand years has become less extensive, more exposed, and shallower. Vessels drawing over 7 feet can no longer enter the harbour, and in winter the Benghasi waters are almost entirely abandoned by shipping.

But in spite of these disadvantages the town has made great commercial progress, especially with France. It imports cottons, sugar, wine, timber; but its former export trade in ivory, gold-dust, and ostrich feathers has been mostly replaced by live stock and cereals to Malta, wool, butter, hides, salt from the surrounding lagoons, and sponges from the shallows along the neighbouring seaboard. The sponges are now seldom gathered by divers, the Greek and Italian fishers now usually employing diving-bells in this industry.

The Benghasi district is generally very fertile, especially along the north coast, which curves round towards Tokra. But it is still so thinly inhabited that the land is at the disposition of the first comer. A palm-grove, the only one occurring on the coast of Cyrenaica west of Derna, occupies a portion of the peninsula north of the town, and the lakes are skirted by a few gardens, which require special cultivation in order to obtain good crops of fruit and vegetables. The surface soil is first removed and matting laid down, after which the mould is replaced, mixed with manure. The matting is supposed to prevent the saline particles from rising to the vegetable humus, while also serving to retain the fertilising substances.

Farther east some old quarries and natural cavities have been reclaimed and cultivated by the peasantry. These plots resemble the "gardens of the Hesperides" spoken of by Scylax, and those that still exist in the neighbourhood of Syracuse. Some of the chasms are flooded, either temporarily after the rains, or

permanently from perennial springs. About five miles east of the town an underground rivulet flows through a deep gallery, which may be reached by a large drain and followed for some distance. This mysterious stream is the famous Lathon or Lethe, the "river of oblivion," seen for a moment and then disappearing for ever. Nevertheless a rivulet flows from these hidden waters through a fissure in the rock to the shallow lake stretching east of Benghazi. This swampy lagoon is itself famous in legendary lore. According to Pindar, Strabo, Lucan, and the unknown authors of "Peutinger's Table," it is a lake Triton or Tritonis, like that situated west of the Syrtes.

Beyond Benghazi the coast continues to trend first towards the south-west, then south and south-east, before describing the long semicircular curve which forms the gulf of the Great Syrtis. Along the shores of this vast southern basin of the Mediterranean no towns or habitations are met, beyond a few groups of hovels and Bedouin encampments. Not even the ruins have survived of *Ajabia*, which, in mediæval times, was a populous and flourishing place as an outport for the products of the oases. The coast, especially in the neighbourhood of Benghazi, is defended by a considerable number of little forts, some mere towers of Arab construction, others old bastions built of Cyclopean blocks. These form square enclosures rounded off at the angles, and filled inside with earth, so that the wall forms a sort of breastwork for the defenders. Beyond it is a deep moat, with bold counterscarp, cut in the live rock, all evidently defensive works erected by civilised peoples in pre-Musculman times.

A few cultivated tracts, which become continually rarer the farther we advance from the capital of Barka, alternate with the grassy steppes and saline pools skirted by swampy margins. Low hills scored with ravines, the haunts of jackals and hyenas, project in headlands seawards. Here and there the coast is fringed with reefs, while elsewhere sandy dunes line the open beach. Not a single palm raises its leafy stem above these dreary, surf-beaten wastes, which are the terror of the mariner. Here the only haven is the little port of *Braiga*, formed by a chain of reefs, and visited by a few vessels engaged in the sulphur trade. This mineral is collected some distance inland, south of the extreme southern bend of the gulf, which is sometimes known as "Sulphur Bay." In the same neighbourhood is a saline lake, whose level has been reduced by evaporation below that of the Mediterranean.

At *Mukhtar*, the point where the road from the mines reaches the coast, a few heaps of stones serve to mark the frontier between the Benghazi district and Tripolitana, properly so called. Near here, according to the commentators, if the story is not altogether fabulous, took place the famous meeting between the young Cyrenian and Carthaginian runners, who, starting from their respective territories at the same time, were to fix the frontier at the place of meeting. But the two brothers Philæni, who represented the interests of Carthage, fraudulently gained an unfair advantage in the race, and having to choose between death on the spot and a fresh contest, preferred to be buried alive under the monument erected to mark the common limit between the two states. Henceforth the shrine of the Philæni became a hallowed spot for the Carthaginians.

## CHAPTER II.

### THE AUJILA OASES.

FROM the crest of the Jebel Akhdar the land falls southwards, not in a gradual slope, but rather through a succession of terraces, or terraced plains intersected by wadies, whose beds were excavated by the running waters at a time when the climate was more humid than at present. But besides the traces of ancient rivers, here may also be seen those of a marine inlet, which may be regarded as the natural limit of the land of Barka in the direction of the Libyan desert. West of the Siwah and Faredgha oases, both studded with "bitter lakes," which were also old arms of the sea, the valley probably still continues at a lower level than that of the Mediterranean. The ground is here covered by myriads of shells of the oyster, pecten, urchin, and other marine fossils. The old level of the plain eroded by the waters is here and there indicated by isolated eminences surrounded by sand.

This depression, known to the Arabs by the name of Gerdeba, is interrupted by the high dunes of Rhat. But if the preliminary measurements taken by Rohlfs and his associates can be trusted, it begins again farther west under the form of a winding wady, which is connected with the oases of Jalo and Aujila. The level of these depressions varies, according to Rohlfs, from 100 to 170 feet below the sea. East of the group of oases the broadest valley, known specially as the "wady," presents a general direction from south to north and north-west, probably merging in the Bir Rassam, another marine bed, which Rohlfs found to be from 330 to 350 feet below the Great Syrtis. Here the ground is abundantly strewn with fossil plants, especially palms and the mastic, forming extensive "petrified forests" like those of Egypt.

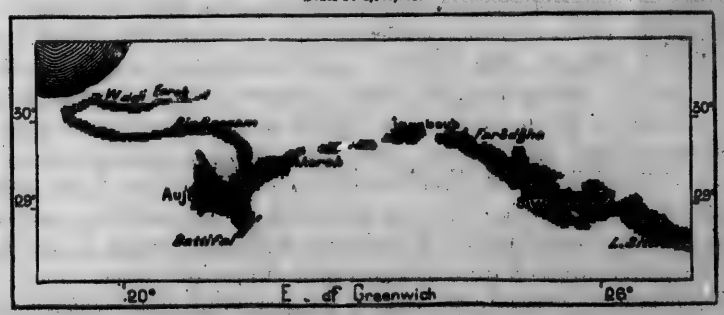
At the point where the Bir Rassam depression was crossed by the German traveller, it turns north-westwards, probably to form a junction near its old mouth with the Wady Fareg, another dried-up basin which, according to the Arabs, is a five days' journey long. Its mouth, now closed by dunes or, perhaps, rocky hills, is indicated by the Ain Kebrit, a place nearly 120 miles south of Benghasi. The Wady Fareg is usually regarded as the line of demarcation between the habitable lands and the desert. Travellers for the first time ascending the southern escarpment are expected to treat their companions to the "feast of

the valley;" otherwise the caravan folk heap the surrounding stones into a cairn to serve as the tomb of the niggard. This is a kind of "anathema" analogous to that raised by the Greek peasantry against the tax-gatherer.

Thus limited southwards by the Wady Fareg, the Bir Rasam, the Wady of the Aujila oases, Gerdoba and Siwah, the limestone plateau of Cyrenaica and Marmarica would seem to form a large island almost detached from the rest of the continent. There can be no doubt that the whole of this depression of the wadies and oases was formerly flooded with the Mediterranean waters. After their separation from the sea by intervening strips of coastlands, the marine basins gradually evaporated under the fierce sun of Africa. But the waters have left clear traces of their existence in the banks of recent shells, the deposits of salt, gypsum, saltpetre, magnesia, and numerous "bitter lakes." Thus from one extremity to the other of the Gulf of Sidra, there is an exact parallelism in the

Fig. 7.—Regions South of Barka lying below the Level of the Mediterranean.

Scale 1 : 8,000,000.




Tracts below the level of the Mediterranean, according to the Survey of 1869.

120 Miles.

physical aspect and relief of the several regions, and in the natural phenomena of which they have been the scene. On both sides low-lying tracts stretch far inland, some of which lie below sea-level, and are supposed to have formed marine inlets at some more or less remote period. It has been proposed to convert both basins into an "inland sea," through which the Mediterranean waters might penetrate into the interior of the continent. After his first explorations in the Libyan oases, Rohlfs thought that by simply piercing the riverain sill on the Gulf of Sidra, it might be possible to flood a large part of the continent as far as the Kufra oasis, under the 20° north latitude, "whereby the largest vessels might reach Fezzan, perhaps even the oasis of Wajanga." But more recent surveys have shown that the geographical changes produced by these projects would be far less important than was supposed; in any case, the results of more accurate measurements must be awaited before there can be any question of creating an "inland sea."

## Topography.

In the part of the territory lying south of the Barka plateau, there are neither towns nor permanent villages, except in the group of oases occupying the depressions in the desert below the level of the Mediterranean. In a bee-line the distance is at least 130 miles between the Aujila oases and the point on the Gulf of Sidra where formerly stood Ajabia, the old outlet for the caravan trade of the interior. The track usually followed by caravans across the desert still reaches the coast at the same point. On an average, travellers take about ten days to cover the distance between Aujila and the seaboard. During the journey they have to traverse vast solitudes, "where even the flea forsakes the wayfarer," and where the only procurable water is a nauseous and brackish fluid often refused by the camel itself. In many places the traces of preceding caravans are soon covered by the sands. Here the only indication of the proper route to follow are the so-called *allems*, or heaps of stones raised at intervals as landmarks. On the eastern route, towards the Faredgha oasis, the sands conceal the dried bodies of forty travellers, who perished of thirst after being abandoned by their guide.*

The eastern oasis of Aujila, which during the Hellenic epoch gave its name to the whole group, is neither the largest nor the most populous. Some 12 miles long with a breadth of little over half a mile, it is developed in the form of a crescent with its convex side facing eastwards. A solitary spring, as in the time of Herodotus, wells up in this depression, which is enclosed on all sides by the stony terraces of the serirs.

The Jalo oasis, which occupies the centre of the group, is perhaps ten times more extensive than that of Aujila; it is about the same length, but in some places has a width of from 6 to 7 miles. But it is absolutely destitute of fresh water, possessing nothing but a saline fluid, which serves to irrigate the palm groves; hence all the drinking water has to be brought from the almost uninhabited oasis of the wady lying farther east. The western part of the group of oases is the most thickly peopled, and in proportion to its extent Aujila is one of the most densely inhabited districts in the whole world. Jalo presents extensive waste spaces and ranges of dunes interrupting its palm groves.

Batofi or Battifal, lying to the south-east, at the southern extremity of the wady, forms a badly watered depression, dotted with a few camping-grounds, and fringed with reeds on which the camels browse. But beyond this point the whole zone of eastern depressions has been abandoned, except the small oasis of Leshkerreh, which is isolated amid the moving sands. Vegetables raised in the gardens of the oases, cereals, and dates, form the chief food of the inhabitants, who however also keep a few flocks of sheep and goats, some poultry and pigeons. But they have neither asses nor oxen, and not more than half a dozen horses. The dog, although rare, is not unknown in the country.

The tribes occupying the Aujila oases do not belong all to one stock. The Wajili, who claim to be aborigines, and who descend perhaps from the Nasamons

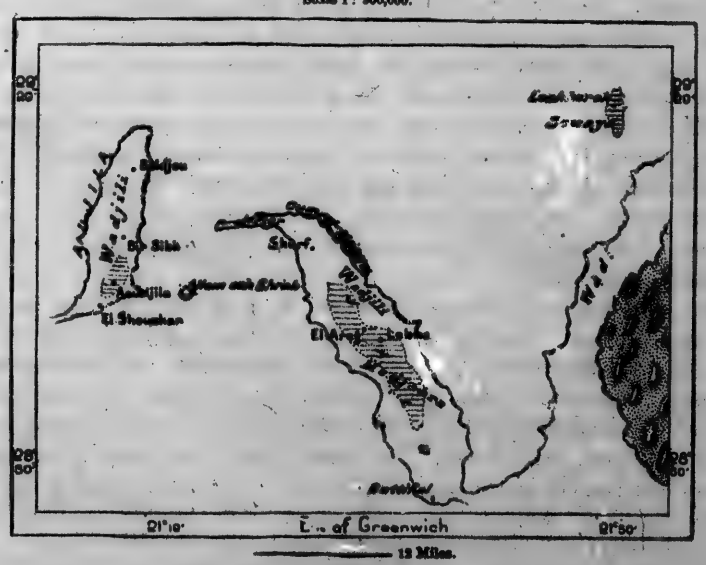
* Rohlfs, "Von Tripolis nach Alexandrien," ii., p. 68.

mentioned by Herodotus, still speak a Berber dialect closely related to the Tamasirht of the Tuaregs. Inhabiting the western oasis and the part of Jalo which surrounds *Lebba*, the capital, they are engaged chiefly in agriculture. They also work the saline beds of the neighbouring depressions, for in these old marine inlets salt is everywhere found, associated with gypsum. They have an excellent breed of camels, which they hire to the caravans, conducting them along the desert routes as far as Benghazi, Murzuk, Siwah, and Kufra.

The Mojabras, who also claim Berber descent, although now speaking Arabic, dwell in the eastern part of the oases, and especially in the district of El-Areg in the Jalo depression. This tribe despise agriculture, but, like the people of Ghadâmes, they are born traders, and like them also have founded commercial centres

Fig. 3.—Group of the Aujila Oases.

Scale 1 : 900,000.




throughout all the Libyan oases. Travellers praise their courage, temperance, and perfect honesty. According to Burckhart, to them is due the discovery of the route leading from the coast through Kufra and Wajanga to Wadai.

The little Leshkerreh oasis is inhabited by the Zwiyas (Swayas), a tribe of Arab origin. But whatever the differences in speech and race, Mojabras, Wajilis and Zwiyas all closely resemble each other physically; and their almost black complexion attests the importance taken by the Negro element in the crossings of the races. The marriage tie is very lax amongst the inhabitants of Aujila. According to Hamilton, men are not unfrequently met who have successively contracted twenty or thirty unions, the price of a bride varying from twenty-five to thirty shillings. But the establishment of the austere Senûsiya sect in the country cannot

fail to effect a reformation in this respect, by rendering divorces less frequent, and restricting the consumption of palm wine.

The trade of the Aujila oases with the states of the interior, and especially with Wadai and Dar-Fur, appears to have acquired some expansion since the route of the Nile has been closed by the revolt of the Egyptian Sudanese. In 1855 the traffic between Aujila and Wadai was completely suspended for some years in consequence of the action of some Maltese traders, who, at the instigation, as was said, of the Pasha of Tripoli, attacked a caravan near Aujila, killed several persons, and carried off thirty captives. It was to avenge this outrage that the Sultan of Wadai put Vogel to death, vowing at the same time to slay all Christian travellers falling into his hands.

The religious order of the Senûsiya virtually rules throughout the oases, but the official representative of authority is a mudir who resides in the Jalo oasis, and who issues his mandates in the name of the Governor of Benghasi. His power is limited to the levying of taxes, the various Wajili, Mojabra, and Zwiya tribes, to the number of twenty, enjoying local independence in all communal matters. When Pacho visited the Jalo oasis, the authority was in the hands of an old French drummer, who had escaped from the Egyptian expedition, and who after a series of remarkable adventures at last found himself at the head of a petty state surrounded by the wilderness, and forgotten by his fellow-countrymen.

## CHAPTER III.

### THE KUFRA OASES.

HE archipelago of green oases forming the Kufra group, lost amid the sands and rocks of the Libyan desert, is one of the least accessible regions in the whole of Africa. Hence it remained unknown to modern explorers till the close of the last century; nor is it at all certain that it formed a part of the world known to the ancients, although undoubtedly inhabited by relatively civilised communities. Hornemann was the first to hear of these oases during his visit to Aujila. But neither Hamilton nor Beurmann, who attempted to penetrate to the mysterious land, were able to procure guides willing to accompany them; and when in 1874 Rohlfs, Zittel, and Jordan started from the Dakhal oasis on the direct route for Kufra, with the compass as their only guide, they were compelled to abandon the project after a six day's march. Although followed by a whole convoy of camels laden with iron water-tanks, they were obliged to turn northwards in the direction of Siwah. Here they had the advantage of a relatively easy route between parallel chains of sand-hills; whereas in the direction of Kufra, for a distance of 240 miles, they would have had successively to cross a series of shifting dunes ranging in altitude from 350 to 500 feet.

In 1879 Rohlfs, penetrating from the Aujila oasis southwards, at last succeeded in reaching Kufra, where, however, he ran a great risk of being massacred, with all his followers. From the last encampment in the Jalo oasis at the Battifal wells to the first springs in the Kufra district, the whole distance is no less than 210 miles. But the track does not follow a straight line, and, especially in the night, caravans often retrace their steps. The route taken by Rohlfs is estimated at 240 miles, a space of absolutely desert land, covered by an uninterrupted march of 106 hours. The surface of the plateau comprised between the two groups of oases presents nothing but a narrow zone of dunes at its southern extremity, while towards the centre it is intersected by a bahr belâ-mâ, a "waterless river," or depression destitute of vegetation, which was so little noticed by Rohlfs that he mentions it only on the report of the natives.

Nearly the whole space traversed by him consists of serirs, stony plateaux perfectly uniform in appearance, and strewn with a fine grit which looked almost

like a mass of petrified lentils. Not a single well affords refreshment to caravans in this frightful solitude, and the inhabitants of Kufra take care that none are sunk. They are anxious to keep aloof from the rest of the world, for they are a "feeble folk," probably less than a thousand souls altogether, and they would have long ago lost their independence had the Turkish troops been able easily to reach the depression.

But although wrongly marked on many maps as included in the government of Tripolitana, the Kufra oases have none the less been conquered by a foreign power, that of the Senûsiya brotherhood. Through their religious propaganda, the Algerian Khwans have become the true masters of the district; and were the mother-house at Jarabûb threatened by any Christian or Osmanli forces advancing from the coast, they would endeavour to establish the centre of their power farther inland, in their great Zawya of El-Istat. At the time of his visit, Rohlfs had ample opportunity of observing how absolute was their authority in the place. Threatened by them, he escaped with his life only by flight; but as soon as he found himself protected by a formal order of the Mahdi of Faredgha, he commanded the homage of all, and his property was strictly respected.

The Kufra oases do not lie below sea-level, as was supposed when the series of depressions was discovered which stretches from the Egyptian oases to the Gulf of Sidra. From the Aujila oasis, which stands below the Mediterranean, the ground rises imperceptibly towards the Taiserbo oasis, the northernmost of the Kufra group, where it already attains an elevation of 830 feet. Kababo, southernmost of the same group, is 1,300 feet high, and the land probably continues to rise in the southern desert as far as the Wajanga oasis. While an ocean of shifting sands rolls away to the north and north-east, dunes are everywhere rare in the Kufra district, except towards the centre, where they enclose the Buseïma oasis. West and south they disappear completely, and here is everywhere visible either the bare rock or the marshy soil constituting the ground of the oases.

The hills rising abruptly above the palm groves and the surrounding steppes consist of masses of Nubian sandstones and limestones overlaid with lavas. Separated one from the other, these hills appear to be the remains of a formerly continuous plateau, which has been mostly weathered or eroded by running waters, leaving nothing but detached fragments as proofs of its former existence. They are of almost uniform height, except that the ideal plain connecting all the summits, and probably coinciding with the ancient surface of the plateau, gradually ascends in the direction from north to south.

Rohlfs nowhere discovered any fossiliferous rocks, but the sand contains a large number of vitrified tubes, products either of electric discharges or of organic secretions. Here and there the surface is also strewn with round sandstone masses of all sizes, producing the effect as if the plain were some vast arsenal stored with shells, balls, and bullets of all kinds. Of these concretions some are hollow, while others have a solid core or are filled with loose sand.

Good water exists in superabundance in the Kufra oases, and may be everywhere reached by sinking wells to a depth of from 3 to 10 feet. In this respect Kufra is

favourably distinguished from nearly all the Libyan oases. This abundance of

Fig. 9.—The Kufra Oasis.

moisture seems surprising in a region where some years pass without any rains.

But it may be presumed that the highlands lying to the south of the plateau are sufficiently elevated to intercept the moisture-bearing clouds.

All the oases, except perhaps that of Sirhen (Zighen), situated in the north-east of the district, have in the centre either a lake, or at least a marshy sebkha, where is collected the overflow of the surface waters. Lake Buseïma, in the oasis of like name, even presents from a distance the appearance of a highland lacustrine basin. Commanded by the crested escarpments of the surrounding cliffs, and reflecting in its blue waters an isolated crag of pyramidal form, it winds through the palm groves for a distance of about 6 miles. The saline efflorescences around its shores, where the columns of air whirl in incessant eddies, resemble the foamy crests of the waves breaking on the beach. Near the margin of all the lakes and saline marshes wells may be sunk which yield fresh water, and the soil is everywhere clothed with an arborescent and grassy vegetation at least sufficient to afford pasturage for the camels.

## Flora and Fauna.

Although distinguished from most other groups of oases in the desert by the wealth of their vegetation, those of Kufra present but a limited number of forms. A single species, such as the alfa, the tamarisk, acacia, or talka, covers extensive tracts, stretching for many square miles beyond the horizon. Rohlf's explorations, interrupted, however, too suddenly to have yielded all the results that might have been expected, discovered only thirty-nine species, of which twenty-six were cultivated plants. One of the characteristic features of the flora of Kufra is the multitude of wild figs, which form dense thickets infested by countless snakes. These reptiles, which are not poisonous, have the habit of coiling round the branches of fig and date trees, and watching with head erect for the little birds coming to perch within their reach. But they are preyed upon in turn by other birds, which appear to be specially characteristic of the avifauna of Kufra.

On the marshy tracts wild duck and geese swarm in myriads; a few storks are also seen in the neighbourhood of the waters, and the oases are visited by flocks of migrating swallows. Gazelles are rare, except in the Erbehna oasis, towards the south-west of the group; but multitudes of little rodents are met, as well as certain species of lizards, spiders, and termites. As in the Aujila district, snails are nowhere to be seen in Kufra.

## Inhabitants.

The term Kufra, derived from Kafir, is explained to mean "Land of the Unbeliever." At the same time, it no longer deserves the title since the first half of the eighteenth century, when the pagan Tibbus were expelled by the Mohammedan Zwiyas. This tribe reached the Kufra territory mostly from the Leshkerreh oasis, and still maintain friendly relations with their fellow-countrymen of the Aujila group. The Tibbus at present seen in the country are barely tolerated, and would appear to be found only in the southern oasis, where they form a distinct community,

confined to a solitary hamlet. Numerous structures, however, attest the former presence of these ancient inhabitants, as well as of their forefathers or precursors, the Garamantes.

Numerous worked flints also afford proof of a prehistoric period in this Libyan region analogous to that of the Stone Age in Europe. On the crest of the Jebel Buseïma, an ancient village has been so well preserved that the cabins might be again rendered inhabitable by simply spreading a roof of palm-branches above the circular walls. The posterns, defensive towers, and outer ramparts all remain just as they were originally constructed. The rocky eminence rising in the middle of Lake Buseïma is also crowned with a citadel of the same type as those erected by the former inhabitants of the country. There are even some ancient burial-grounds, which the Mohammedans suffer to be profaned with impunity, the bodies, deposited in a sitting attitude, being those of "reprobate Kafirs."

The Zwiya Arabs, now masters of the land by right of conquest, claim to be amongst the most zealous disciples of the Prophet since they have accepted the teachings of the Senûsiya brotherhood. A Zwiya sheikh will never present himself before the people of his tribe except on horseback, shaded by an umbrella, bearing a falcon on a small cushion, and followed by a greyhound. He is always armed with a long matchlock provided with a rusty bayonet. The Zwiyas leave to the despised Tibbus of the southern village the use of their primitive weapons, such as the long heavy iron club tipped with steel, which describes a whirling motion in its flight through the air.

### Topography.

The Kufra group comprises five chief oases, of which the most important, if not the largest, is Taiserbo, in the north-west. Here *Jrangedi*, the old capital, and residence of the Tibbu sultans, is still crowned by the remains of a castle built with blocks of salt. The name of Kufra, now applied to the whole territory, appears to have been originally restricted to Taiserbo alone. But the political pre-eminence of this oasis caused its name to be extended to all the other members of the group, although lying at a mean distance of about 60 miles from each other. Sirhen, in the north-east, is almost uninhabited, and here the Zwiyas have not even planted date-palms, although extensive groves might soon be developed with a little cultivation. Nevertheless, it forms a very important caravan station, thanks to the excellent pasturage it affords for camels.

Buseïma, in the centre of the group, is noted for its lake, and for the Jebel Buseïma, Jebel Sirhen, and Jebel Nari ranges enclosing it on the north, north-east, and south, respectively. The latter, under various names, and interrupted at several points, develops a total length of about 120 miles in the direction from east to west.

In the south-west, Erbehna is about the same size and presents analogous features to those of Buseïma, consisting, like it, of a circular zone of palms enclosing a lake, which is dominated northwards by the abrupt escarpments of a mountain

range. Lastly, in the south-east, stretches the largest member of the group, the crescent-shaped and evergreen Kebabo, which has a total length of no less than 120 miles. Here is concentrated nearly the whole population of Kufra, and about the middle of the oasis has been founded the village of *Jof*, or the "hollow," which has now become the largest agglomeration of huts in this region of Africa. Here also stands the monastery where reside the masters of the land. The *Zauya-el-Itat*, or "Convent of Purity," presents the aspect of a fortress. Above its lofty white

Fig. 10.—Kufra Oasis.

Scale 1 : 3,400,000.

walls, which are strong enough to sustain a siege, nothing is visible except the roofs of the terraced houses. But no longer dreading an open attack, the Senûsiya brethren, who reside within the enclosure to the number of two hundred and fifty, nearly all in separate cells, have laid out garden plots beyond the precincts. Close to the convent itself they have planted an orchard several acres in extent, where are cultivated nearly all the fruit-trees of the Tripolitana oases. Of the million of date-palms owned by them in the Kufra territory, nearly a third were received from the piety of the faithful.

## CHAPTER IV.

### THE GREAT SYRTIS AND TRIPOLITANA SEABOARD.

THE maritime region of Tripoli, bounded east by the extreme bend of the Great Syrtis, west by the southern headlands of the Tunisian coast, forms a distinct territory both in an administrative and geographical sense. The belt of coastlands, varying in width, and intersected by a thousand mostly dry wadies draining to the Mediterranean, is dominated south and south-west either by chains of rocky hills and mountains, or by the rugged scarp of a plateau which runs mainly parallel with the shores of the Syrtes. This zone constitutes Tripolitana in the stricter sense of the term.

The vilayet of the same name also comprises the portion of the plateau stretching through Ghadames south-westwards to the Algerian frontier. But this forms a separate geographical area, sloping, not seawards but towards the west, in the direction of the Sahara. In the south yet another natural region is formed by the scattered oases of Fezzan, separated from the Mediterranean basin by hills, plateaux, and vast desert wastes. Excluding Cyrenaica, Fezzan, Ghadames, and Rhat, and disregarding administrative divisions, the surface of Tripolitana, within the water-parting between the marine and inland basins, may be approximately estimated at 110,000 square miles, with a total population of probably not more than 650,000, or about six persons to the square mile.

#### General Survey.

Farther removed from Europe than Mauritania, and possessing but a small extent of arable lands, the seaboard of Tripolitana could never have developed much commercial life throughout the historic period. Vessels doubling the projecting headlands of Numidia and Cyrenaica, and sailing southwards, found the desert in many places already encroaching on the marine waters. For some hundreds of miles the coast is low and sandy, or else fringed with reefs, while swamps and lagoons stretch far inland, separated from the sea by narrow strips of coastlands. These are often scarcely to be distinguished from the surface of the water, and the Syrtes were especially dreaded by mariners, owing to their surf-beaten shores, the

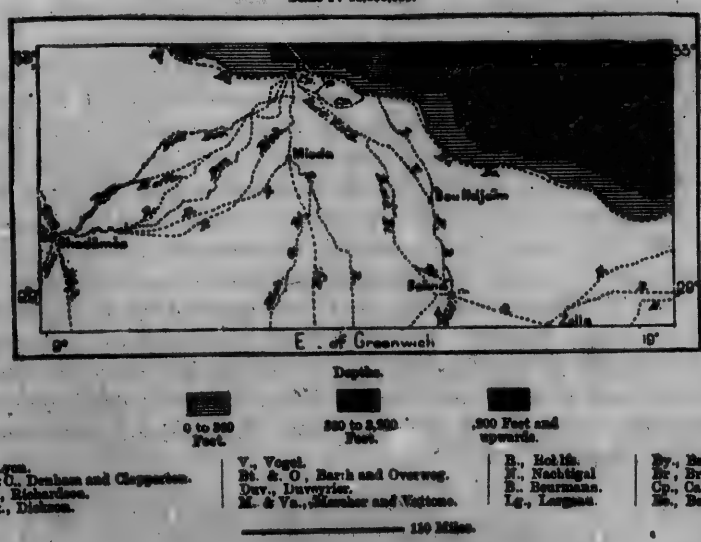
exhalations from the surrounding lagoons, and the savage character of the local tribes.

The scanty population of Tripolitana, its slight share in the general commercial movement of the Mediterranean, the trifling revenue yielded to its political rulers, show that during the last two thousand years the country has remained in a more or less stagnant state. Its importance has in fact diminished on the seaboard, where great cities formerly flourished, and in the regions traversed by the main highways to the interior.

The exploration, one might almost say the discovery, of Tripolitana, remains still to be achieved. Although since the journey of Hornemann in the last century, the country has been visited by such men as Lyon and Ritchie, Denham, Oudney

Fig. 11.—Routes of the Chief Explorers in Tripolitana.

Scale 1 : 12,000,000.




and Clapperton, Laing, Richardson, Barth, Vogel, Beurmann, Duveyrier, Mercher and Vattone, Rohlfs, Nachtigal, Von Bary and Krafft, these explorers, starting mostly from Tripoli, have neglected many interesting districts in the interior; while little has yet been done for the geology, meteorology, ethnology, and archæology of the land.

In our days the earth has already become too small for the restless spirit of modern enterprise, and certain geographical conditions, with which the ancients, confined to the marine highways, had no need to occupy themselves, have acquired quite a new significance. The very break in the coastline which serves to cut off the plains of Tripoli from European influence, has become an advantage for the communications with the interior. However otherwise inconvenient, the harbours of Tripolitana are the natural points of departure for the caravans proceeding to

Western Sudan. Thanks to the gulf of the two Syrtes, which forms a bight in the contour of the continent of a mean depth of about 300 miles, the journey across the desert to the fertile regions of the interior is reduced by one-fourth. Moreover the route from Tripoli to Lake Tsad, which lies due south, is relatively easy, being relieved at tolerably short intervals by the Fezzan and other oases. Neither the hills nor the dunes present any serious difficulties to modern engineers, while the scattered populations of the oases, long familiar with their European visitors, would certainly oppose no obstacle to the construction of highways of communication. "To the future master of Tripoli belongs the Sudan," exclaims the traveller G. Rohlfs, when urging Italy to take possession of Tripolitana. He proposes, either from the port of Tripoli or from that of *Braïga*, at the head of the Great Syrtis, to construct a railway in the direction of Kuka, near the west coast of Lake Tsad. Even this line might perhaps be shortened by about 120 miles by creating a harbour in deep water on the west side of the Syrtis, somewhere near the Marsa-Zafran creek.

Not only is this the shortest route for the line destined one day to connect the basin of the Mediterranean with that of the great inland lake, but it also seems to be the most convenient for the continental trunk line, terminating on the Atlantic coast at the head of the Gulf of Guinea, between the Niger and Congo basins. Hence there can be no doubt that the railway penetrating from Tripolitana southwards must sooner or later become one of the great commercial highways of the world. But even this can scarcely exceed in importance the more westerly route, which is intended to connect the already developed network on the Algerian coast through the Wed-Messaura with the great bend described by the Niger below Timbuktu. In this direction both termini would offer an immense advantage in respect of population, abundance of natural resources, and commercial activity. Here also it would be a mere question of continuing lines either already opened, or for which concessions have been granted south of Algeria to a more southern latitude than Tripoli.

### Physical Features.

The Tripolitana highlands take their rise eastwards in an unexplored region of the desert, where the Harûj-el-Aswad, or Black Harûj, so called from the colour of its lavas, forms a chain of volcanic origin with a mean direction from south-east to north-west. Hitherto Hornemann is the only traveller who has crossed the eastern section of this range, although nearly a century has lapsed since his visit. More recent explorers have only seen these mountains from a distance, or heard of them from native report.

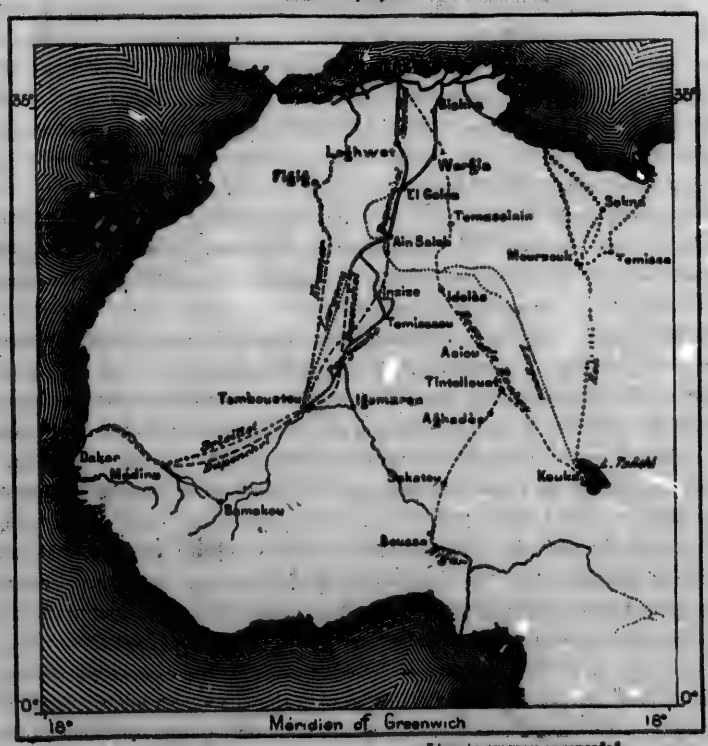
The Black Harûj, which is also covered with much reddish scoria, lighter than the black lavas, consists of small low ridges and isolated peaks with abrupt sides furrowed by deep fissures and crevasses. These hills, which have a mean elevation of 650 feet above the plateau, itself about 2,000 feet above sea-level, are perhaps the volcanoes which formerly lit up the shores of the Mediterranean or of the lakes

stretched at their foot. But the system is also largely composed of the sandstone and limestone formations, which have been pierced by the eruptive lavas. South of the Black Harûj stretches an extensive calcareous hamâda, or plateau, terminating north-east of the Murzuk depression in a group of cliffs and hills known as the Harûj-el-Abiad, or "White Harûj." Here, according to the Arab reports, are found the perfect skeletons of large marine animals.

Beyond the pass, which affords communication between the Zella and Fogha

Fig. 12.—Projected Railways across West Africa.

Scale 1: 41,000,000.




cases on the northern and southern slopes respectively, the Harûj-el-Aswad is continued westwards by the Jebel-es-Sola, or "Black Mountains," already by Pliny designated by the synonymous expression, *Mons Ater*. According to the explanation of the Roman encyclopædist, this appellation, which has persisted for at least two thousand years, is due to the appearance of these uplands, which look as if blackened by fire, although, when lit up by the solar rays, they seem to be wrapped in flame.

The Black Mountains, the highest range in south Tripolitana, follow the normal direction from east to west, while describing a slight curve with its convex side facing northwards. It is divided into two sections of different aspect by a broad breach, or as Duveyrier describes it, "a continuous series of ravines," traversed by the caravan route between Murzuk and the Jofra oasis. The very names given to each of these sections of the range—Soda Sherkiyah and Soda Gharbiyah—indicate their respective positions east and west of this commercial highway. The Soda Sherkiyah, or "Eastern Soda," stands at but a slight elevation above the limestone plateau; whereas the "Western Soda" attains considerable altitudes, the Kalb-Warkau, one of its summits, having a height of 3,000 feet, according to some authorities. At its western extremity, where it merges in the great stony hamâda known as the Hamâda-el-Homra, or "Red Plateau," the Naber-el-Jrug, another of its peaks, is even said to be 4,330 feet high. According to Rohlfs, who, however, was unable to take any accurate measurements in the Jebel-es-Soda, there are also in the eastern section of the system other crests reaching an altitude of 5,000 feet.

The statement of Hornemann, that the Jebel-es-Soda is to a large extent of volcanic origin, has been fully confirmed by Duveyrier, who has brought back fragments of a basaltic lava, which the geologist Descloizeaux regards as coming very probably from an ancient submarine eruption.

Various spurs branch off northwards from the main range, sinking gradually down to the low-lying coastlands. Several other projections have also become completely isolated from the rest of the system. Such, for instance, are those running towards the Jofra oasis, where they rise from 650 to 880 feet above the wady, which has itself a mean elevation of about 650 feet above the sea. The Lokhmani, one of these isolated groups, is clothed with palm groves half way up its sides.

North of the oasis the plain is dominated by the Jebel-Tar, a mountain mass completely distinct from the Soda range, and consisting of tertiary formations which contain thick fossiliferous beds. But its moderate elevation, not exceeding 1,330 feet, is not sufficient to arrest the moisture-bearing clouds, so that on the slopes of the Jebel-Tar nothing is found except springs of bitter water. In memory of the explorer Nachtigal, who has done such excellent work in the Sahara and Sudan, his friend Rohlfs has given to the culminating point of the Tar system the appellation of Jebel Bulbul, or "Mount Nightingale" (Nachtigal).

West and north-west of the Jebel-es-Soda stretches the interminable "Red Plateau," whose superficial area is estimated at some 40,000 square miles. From north to south, where it was traversed by Barth in 1850, between Tripoli and Murzuk, it is over 120 miles long, while extending through the Tinghert plateau for 420 miles east and west to the south of the Ghadames oases and of the region of Algerian dunes. This Hamâda-el-Homra is of all the African "hamâdas" the hamâda in a superlative sense—the "burnt" region which, owing to the absence of water, is most dreaded by caravans. On the edge of the cliff leading to it, each wayfarer religiously casts a stone on the *bueaffar*, or "father of the journey," a cairn or

pyramid of propitiation raised from century to century by successive generations of travellers.

Herbage, brushwood, and living things are rare in this desolate waste, which is avoided by the very birds, that fear to wing their way across solitudes more formidable than the seas themselves. Nevertheless camels find here and there a little nourishment in the scanty vegetation offered by a few depressions along the track across the plateau. Barth even came upon some stunted palms in one of these hollows, where the water collected after the rare storms soon evaporates, leaving nothing in its place except a thin saline efflorescence. In many places channels have been formed by the wadies, although the running waters have not been sufficiently copious to excavate a complete river bed in the rock, so that beyond the last basin of erosion the depression is again closed.

The plateau is on the whole remarkably level and uniform, free alike from stones and sand. In altitude it varies scarcely more than 150 feet, from 1,500 to 1,650, the highest point along the route followed by Barth being 1,700 feet, and indicated at a distance by a heap of stones. At first sight the surface of the ground might seem to be formed of basaltic slabs, so black and parched is its appearance. But it really consists of sandstone layers overlain with clay and gypsum, and still more frequently with marls, limestone, and silicious strata, in which numerous fossil shells have been collected.

Southwards the ground falls through a succession of terraces and cliffs scored with deep ravines. The limit of the northern desert is marked by the copious Hassi wells and other springs, which ooze up from a depth of 760 feet below the plateau. South of this point begins the region of oases inhabited by the Hamatic (Berber) communities. The observer asks in amazement how the Roman armies, possessing no camels like the caravans of our days, were able to traverse the Red Hamâda, as stated by the old writers, and as attested by the richly sculptured tombs occurring at intervals along the line of march, and especially on the crests or summits commanding extensive views of the country. Some of these sepulchral monuments, the *sdnem* of the Arabs, are graceful little shrines, whose correct style shows that the architects and sculptors of these remote regions scarcely yielded in artistic taste to those of the mother country.

In modern times the direct route over the hamâda was first explored by Barth, Overweg, and Richardson, other European travellers having followed the more easterly road across the Jebel-es-Soda. There can be little doubt that during the last two thousand years the whole region has gradually become drier, and thus would be explained the relatively easier access to the interior formerly afforded by the western route, *prater caput saxi*,* "by the head of the rock."

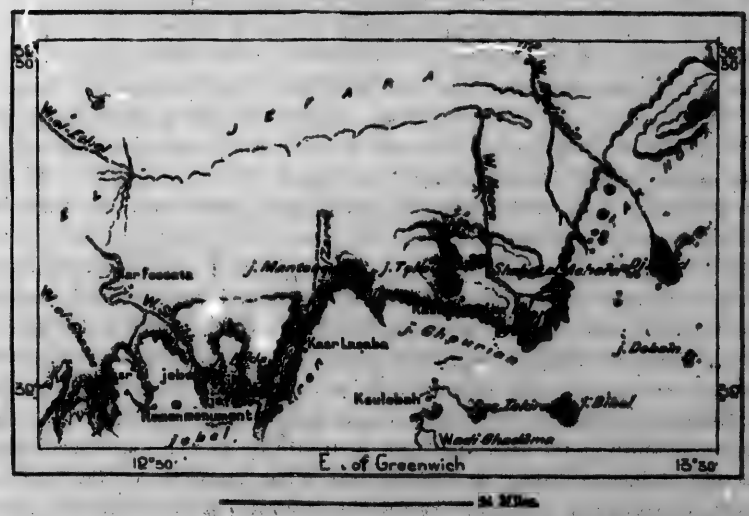
North-eastwards the Red Plateau, furrowed by numerous wadies, is broken into narrow promontories, which are again cut up into secondary headlands. Some of these segments of the great rocky tableland have even been completely detached from the hamâda, thus forming small distinct ridges limited on either side by watercourses. Such are the Kaf Mugelad, the Jebel Khadamia, and the Jebel

* Pliny, v., ch. 5.

Ergenn, whose mean elevation is about the same as that of the plateau. From the head of the passes intersecting them a distant view is commanded of the system of broad ravines, all draining east and north-east towards the Mediterranean. In this rugged district every headland is crowned, like the summits of the hamâda, with the ruins of tombs and of other Roman structures, embellished with columns and carvings. A methodical survey of the whole of this part of Tripolitana is urgently demanded, says Rohlfs, in order to study the interesting inscriptions and recover the more choice bas-reliefs here found in abundance. The establishment of an archæological museum at Tripoli might help to preserve valuable ornaments, which

Fig. 13.—Jebel Ghurian.

Scale 1 : 1,000,000.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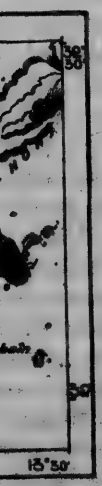

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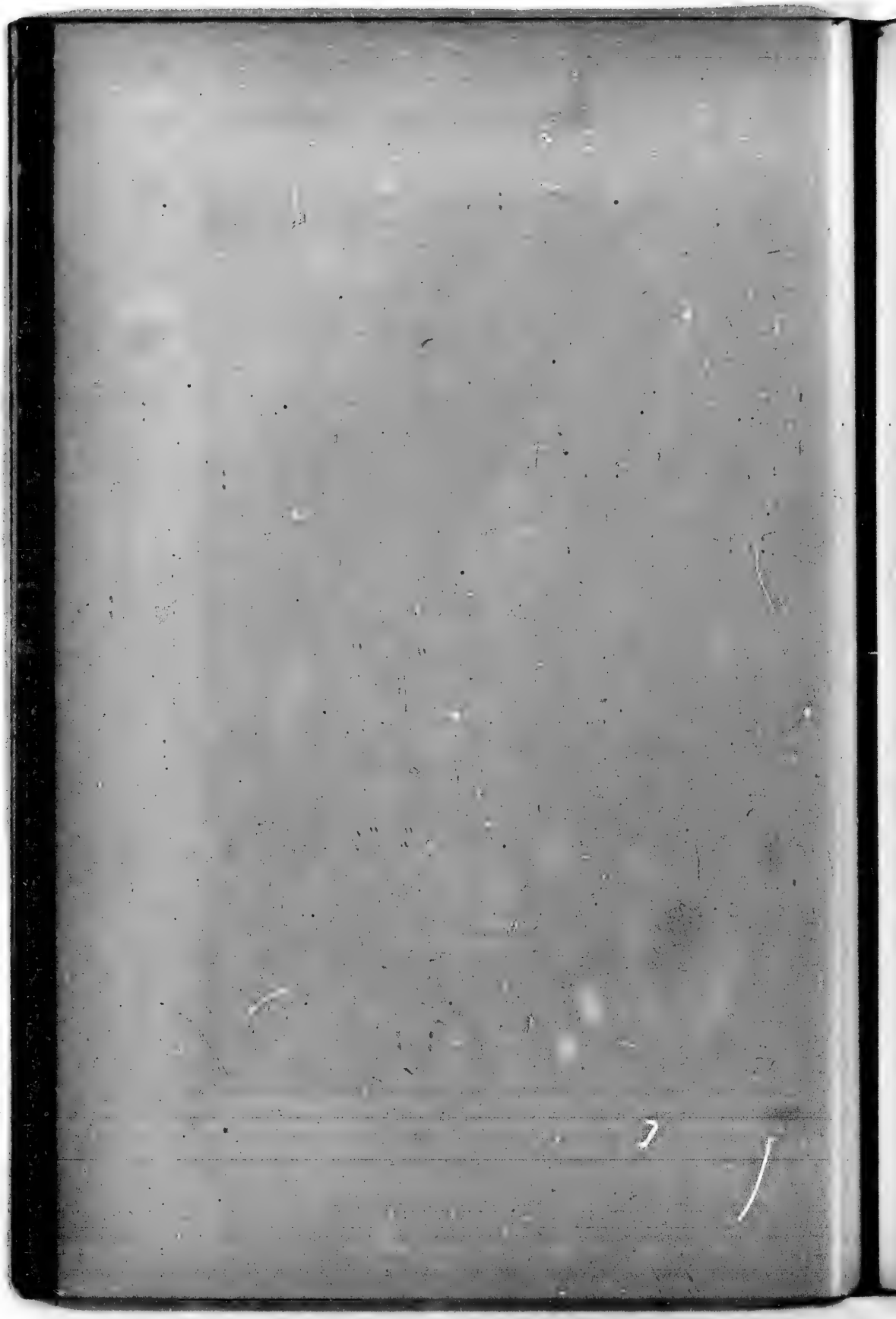
THE KASR-EL-JEBEL CIRQUE.



palm-groves, has some points 2,250 feet high. Barth even mentions the Bibel, one "very high mountain," whose approximate altitude, however, he omits to give.

In the direction of the hills and lowlands which slope seawards, and which are in fact known as the Jefârah or "Flats," the terrace of Ghurian terminates in many places in abrupt escarpments. The ravines at its foot, often filled with verdant fruit-trees, are commanded on either side by bare walls, now of white limestone, now of dark basaltic rocks. On the edge of one of these almost vertical precipices stands the citadel of Kasr Ghurian, flanked with round towers at the four angles of its enclosure. From this eagles' eyrie the Turkish garrison commands an extensive prospect of the region entrusted to its charge.

West of the Jebel Ghurian the scarp of the great terrace, which Barth regards as the "true continental coastline," maintains throughout nearly its whole extent the same abrupt declivity. Along the Wady Sert in the Jebel Yefren the cliff rises vertically at one point to a height of 1,630 feet. One of the summits on the outer ridge of the terrace is crowned at its culminating point (2,180 feet) by a stronghold even more formidable than that of Ghurian, to which the appellation of Kasr-el-Jebel, or "Hill Fort," has been given in a pre-eminent sense. The side of the open cirque at the foot of the citadel is a stratified formation of surprising regularity. Diversely coloured gypsum and limestone layers, the latter forming projecting cornices between the softer and more weathered beds of gypsum, alternate from top to bottom of the cliff in a perfectly uniform series, as if planned by an architect. The culminating point of the whole district, exceeding 2,830 feet, is indicated from a distance by the remains of a Roman tomb.

West of the Jebel Yefren follow other still little known ranges, the Nefûsa and beyond it the Dwirat, which continues to run parallel with and at a distance of about 60 miles from the coast, to which farther west it gradually approaches, ultimately disappearing in Tunisia, near the Gulf of Cabes. All these outer ranges of Tripolitana are almost everywhere covered with a vegetable humus like those of the Algerian Kabylia, and the fruit-trees, cultivated by the Berbers with the same care in both regions, thrive equally well in Tripolitana. Not a village is here without its groves of dates, olives, pomegranates, figs, apricots, and other fruits.

Facing the Jebel properly so-called—that is, the rugged escarpment of the plateau—stand a few isolated volcanoes now extinct. Even in the midst of the uplands the limestone rocks are pierced with crevasses, through which basaltic lavas have burst forth. Some of these cones would seem to have forced their way upwards through the sedimentary rocks of the Jebel Dwirat. North-west of the Jebel Ghurian rises the twin-crested Manterus volcano, and farther east Mount Tekut, perhaps the highest point in North Tripolitana (2,840 feet).

North-east of the terminal rampart of the Ghurian system stretches a lower terrace studded with *shabas* or *shabats*, that is, volcanic chasms surrounded by lava streams, which are now overgrown with alfa grass. Farther on the sacred Jebel Msid, its summit crowned with an Arab castle of the thirteenth century, lifts its round grassy cupola far above all the surrounding eminences. Beyond this point stretches seawards the upland Tar-hôna plain (1,000 feet), whose argillaceous

surface is here and there broken by a few volcanic heights, which, however, do not form a mountain range, as is usually represented on the maps.

North-eastwards another Jebel Msid, also highly venerated and crowned with a zawya or moslem monastery, limits the Tar-hóna plain on the one hand and on the other the Bondara and Mesellata hills, whose spurs terminate on the sea-coast. One of these advanced eminences, whose summit is disposed in three distinct crests, Barth is disposed to identify with the mountain of the Three Graces mentioned by Herodotus, who, however, places it much farther inland.

### Hydrographic System.

Although more than half the size of France, Tripolitana, properly so-called, has not a single perennial stream. But during the rainy season superb cascades are seen tumbling down the rocky sides of Ghurian and Yefren into the lower gorges, and the muddy waters are frequently copious enough to force their way seawards through the sand accumulated in their beds. Barth reports, on the authority of the natives, that in the year 1806 the Wady-el-Ghasas, flowing from the Jebel Yefren, united with the other torrents of the valley in a powerful stream which reached the coast across the Zenzur palm-groves west of Tripoli, and discoloured the sea with its alluvia for 120 miles, as far as the island of Jerba.

Most of the watercourses have broad channels confined between high banks, a proof of the large volume sent down during the floods. Nevertheless travellers usually take the winding beds of these wadies when their route lies in the same direction, and except in the rainy season they have little occasion to regret the ruined state of the Roman bridges met here and there along the more frequented tracks.

Far more useful than the restoration of these bridges would be that of the dams and dykes, which retain the temporary waters of the inundations at the outlets of the upland valleys. At the foot of the Jebel Ghurian, Barth saw one of these reservoirs, of Arab construction, whose ruined ramparts are now traversed by the caravan route. The only receptacles at present known to the people of Tripolitana are the *mayens*, or stone cisterns, whose gates are carefully kept under lock and key for the dry season. In several districts the art is also understood of excavating the so-called *fogarats*, or underground galleries, in which the fluid is collected, and which communicate with the surface through wells sunk at intervals in the ground. These galleries are similar to the *kanats* met in the arid districts of Persia and Afghanistan.

Amongst the "extinct" rivers which formerly rolled down considerable volumes, but whose beds have now for most of the year to be excavated for a little brackish fluid, there are several whose course has been completely effaced before reaching the seaward area of drainage. On the Mediterranean slope of Tripolitana all the wadies, whatever be the quantity of water flooding their channels after sudden downpours or protracted rains, reach the sea, or at least the sebkhas on the coast. Some of them have even vast basins, in comparison with which those of the Italian

rivers, flowing over against them on the opposite side of the Mediterranean, would be regarded as but of slight importance. Thus the wady debouching at Mukhtar, that is, on the frontier of Barka and Tripolitana proper, has a whole network of secondary wadies, draining a district 120 miles in length along the northern slopes of the Haruj and Jebel-es-Soda.

Farther west, the Wady-esh-Shegga also receives the waters of an extensive territory, in which is included the Jofra oasis. The Wady Um-esh-Sheil has its source in the very heart of the plateaux between the Black Mountains and the Red Hamâda, and reaches the west coast of the Great Syrtis after a course of at least 300 miles. Of smaller volume, but more famous, is the Wady Zemzem, as shown by its very name, which is that of the sacred spring in the temple of the Kaaba. So highly esteemed are the waters collected in the cavities excavated in its bed, that they are supposed to rival those of the Mecca fountain itself. The Sufajîn (Suf-el-Jin), the most copious of all these wadies, is fed by all the torrents of the plateaux comprised between the Jebel Ghurian and the Jebel Khadaima. Going westwards, its basin is the last in Tripolitana of any considerable extent, being estimated at about 8,000 square miles. The Wady-el-Kaan, which is crossed in the neighbourhood of the Leptis mines, has a course of only a few miles; but it has been identified as the Cynips, so famous in ancient times for the fertility of the valley watered by it. It is also known as the Wady-el-Mghar-el-Grin, or "River of Abysses." But its waters, which were formerly of excellent quality, and which were conveyed by an aqueduct to the inhabitants of Leptis, have become for some unknown reason so bad that travellers carefully abstain from drinking them.

In the west of Tripoli the only streams of any extent are the wadies Haera, El-Ethel, Beidha, and Segeao, all flowing from the hills and escarpments of Barth's "continental coastline."

## Coastlands.

A very large section of the seaboard, east and west of the hilly district which terminates at Cape Misrata at the angle of separation between the Great Syrtis and the coast of Khoms, is occupied with the so-called *sebkhas*, that is, shallow depressions in which the waters of the wadies are collected. Occasionally, also, the marine currents penetrate into these lagoons across the intervening strip of coast, or through temporary canals opened during stormy weather. But for the greater part of the year most of the sebkhas are nothing more than natural salt-pits, whose muddy margins are overgrown with alkaline plants.

The longest of these coast lagoons begins at Cape Misrata and extends south-east and east parallel with the shores of the Syrtis, from which it is separated by a line of dunes. This is the Tawagha sebkha, into which the wadies of the interior discharge their floods during the rainy season. It formerly communicated with the sea, and was navigable, as appears from the remains of the "Roman" canal, as it is still called. In certain places the outlines of the sebkhas, as well as those of the arable lands and oases, have been modified by the sands of the beach, which are carried some distance inland, and which are disposed in successive ranges of dunes.

Such are the sands which encircle the date-palm plantations of Tripoli, and which are described by travellers as already forming part of the "great desert," although this region lies hundreds of miles distant, beyond the Jebel Ghurian.

Along the shores of the Great Syrtis and of Western Tripolitana the tides are so little felt that their existence has been denied by several observers, such as Della Cella, Pezant, and even the experienced Captain Beechey. During syzygy the water rises about two feet, and occasionally, when impelled by fierce northern gales, as high as five feet. It is difficult to form an adequate idea of the enormous power exercised by the surf along the crescent-shaped shores of the Great Syrtis, which have at all times been dreaded by seafarers, and regarded by them as irresistibly attracting vessels to their destruction. According to Sallust, this very attractive force is indicated by the term Syrtis. Possibly, also, the terrible Lamia, that devouring monster said by the Greeks to dwell in a cavern on this seaboard, was nothing more in their eyes than the spirit of the storm and whirlwind.

At Zafran, near the ancient Medineh-es-Sultan, the coast is fringed, as it were, by huge blocks, lashed and piled up by the waves in the form of breakwaters. At first sight they in fact present the appearance of the remains of colossal quays, although the vast development of these formidable sea walls shows that we are in presence of some work of nature. Nevertheless this natural structure had formerly been utilised as a support for an artificial pier erected to shelter the port of Zafran.

The coast of Tripolitana is one of those where, right or wrong, indications are supposed to have been observed of a slow subsidence of the ground, or else of an upheaval of the sea-level. At Tripoli, the movement is said to have proceeded at the yearly rate of about half an inch during the last half century. Thus the Mediterranean would appear to be slowly but incessantly working gradually to recover its ancient inlets, which, although now dried up, still lie below sea-level.

## Climate.

The climate of Tripolitana resembles that of the other regions along the North African seaboard, except that here the southerly deflection of the coastline gives it a higher average temperature, and on the whole a more continental character. The maritime district is comprised within the isothermals of 68° and 72° F., whereas in the interior the heat is higher on the low-lying districts, lower on the uplands. On the sands at noon it exceeds 154°, and even 170° F., and Rohlfs' dog had in some places to be shod with sandals before he could follow his master across the burning soil. According to the same traveller, the normal yearly temperature is as high as 86° F. in the Jofra oasis at the foot of the Jebel-es-Soda. But it should be added that these intense heats are far more easily borne in the dry regions of the interior than would be the case on the coastlands, where perspiration is checked by the excessive atmospheric moisture. The impression produced by the heat along the seaboard may be compared to that felt in a Turkish bath.

Between the extremes of heat, exceeding 105° and 112° F., and of cold, the

difference is enormous, for it often freezes on the plateaux. Snow is even said to have fallen in the Jofra oasis, as well as on the neighbouring hills.

On the coast the heat and dryness of the air are daily tempered, at least from April to October, by the marine breeze, which blows regularly from the north-east in the same direction as the normal trade winds. It deflects gradually eastwards, and after an interval of calm the land breeze springs up, lasting the whole night, but towards the morning veering a little round to the west. Occasionally storms arise in this season, when the marine breezes become violent gales, dangerous to the shipping along the coast, on which the surf beats with great fury. During the winter months, which also coincide with the rainy season, the winds blow usually from the west, north-west, or north, and these also are accompanied by storms. But far more dangerous, owing to their sudden appearance, are the abrupt transitions from north-east to south-west, generally followed by thunder and heavy rains.

Of frequent occurrence are the calms, during which vapours accumulate in the air in such abundance that the sun becomes obscured, and the firmament is everywhere overcast by a white veil of mist. In the Mediterranean basin there are few other regions where grey tints prevail so generally in the atmosphere. To catch a glimpse of the blue aërial spaces, the traveller must penetrate far into the interior of the country. Here the vapours, instead of spreading in a uniform veil over the whole sky, are condensed into thick layers of dappled cloudlets. Nevertheless the skies of Tripolitana never acquire the serene azure which is so much admired in the temperate regions of Europe. The dust raised and dispersed throughout the atmosphere by the desert wind, at times in the form of the simoom, is held for weeks and months in suspension, always imparting to the heavens a slightly leaden effect. Vessels anchored in the port of Tripoli often find their decks strewn with sand by the storm, during which the town and the shore become wrapped in a thick fog or cloud, dry and parching rather than damp. Under the influence of the sandstorm, commonly called *gebli*, or "south wind," electricity is freely liberated. Sheltered in his tent, the traveller Stecker was on one occasion able to write his name in streaks of flame on the canvas covering.

In the province of Tripolitana proper the mean annual rainfall is estimated at about eight inches, a proportion far exceeded in Mauritania and Cyrenaica, that is to say, the two regions projecting northwards to the right and left of the depression of the Syrtes. In its pluviometric conditions Tripolitana thus belongs rather to the desert zone than to that of the coastlands. Heavy showers occur most frequently and in greatest abundance on the northern slopes of the Jebel Ghurian and of the other chains forming the scarp of the plateau. Hence in wealth of vegetation these tracts rival the Algerian Kabylia itself, and might easily afford sustenance for a population of many hundred thousand souls. But in the oases of the plains it sometimes happens that tillage is suspended for years, owing to the absence of rain. Even moist fogs are rare, although here and there developed on the cultivated plateaux before sunrise, or spreading a fleecy veil over the palm groves of the oases. But however intensely dry the atmosphere usually is,

vegetation is always able to absorb a little of the latent moisture, for it survives for years without receiving any rain. Thus the gelgelan (*mathiola livida*) a species of crucifer, distils every morning a few drops at the tip of its leaves, although no appearance of dew can be detected round about. The very rocks themselves must have the power of attracting some of the humidity present in the atmosphere; else whence those perennial springs, such as the inexhaustible well of Ghadames, which continue to ooze up in the oases, where ten, or even twenty, years sometimes pass without a single shower to moisten the surrounding cliffs, at whose foot the limpid fountain never fails?

## Flora.

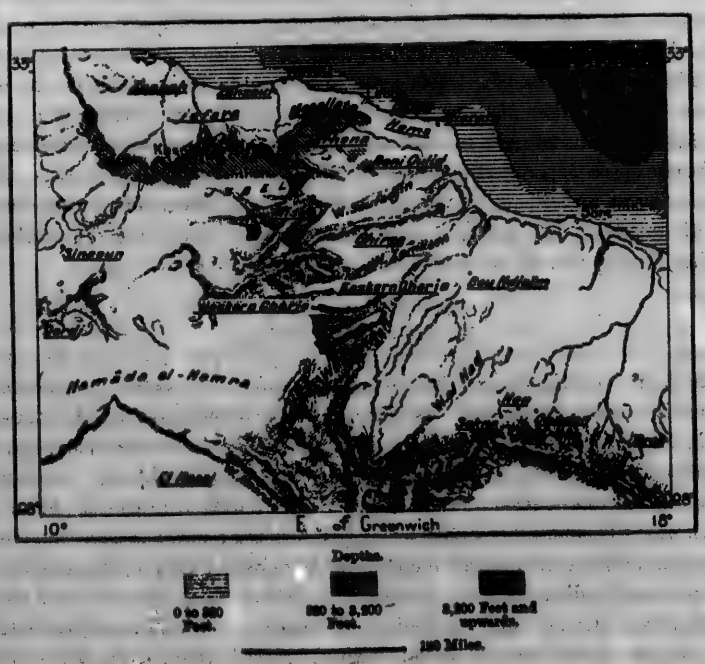
Although the botanical survey of Tripolitana is far from complete, it may already be concluded that its flora is relatively very poor, thanks partly to the slight relief of the land, partly to the scanty rainfall. With the exception of thirteen new species or varieties, all the plants round the shores of the Syrtes and in the inland districts as far as Fezzan belong to the flora of Mauritania, Egypt, or Sicily. A few Italian species, which do not occur in Tunisia, are met in Tripolitana, a land of transition between the desert and the Mediterranean basin. Nearly all the fruit-trees of temperate Europe grow here, but do not all yield good fruits. The almond thrives admirably, forming magnificent groves even at Ghadames, on the very verge of the desert. The quince, pomegranate, and fig also flourish in the oases, while everywhere the vine gives good returns, although the grape is not used for making wine. The apricot grows to a great size, but in the southern districts produces an indifferent fruit. Even the peach, plum, and apple, growing in the oases beneath the shade of the date palm, are no longer much more than ornamental plants. The apples gathered in the oases are no larger than walnuts, and are quite tasteless. In these sultry latitudes the orange is also a poor fruit, although the idea of the "golden apple" is found associated in legend with that of those "gardens of the Hesperides," many of which were placed by the ancients in the vicinity of Tripolitana, properly so called. The citron also scarcely flourishes beyond the seaboard districts. In the Ghadames oasis there exists only a solitary specimen.

The characteristic fruit-trees of Tripolitana are the olive and the date. As regards the former, the coastlands of the Syrtes belong to the same zone as Sicily and South Italy, while by the latter they are connected with the oases of the interior. Around many villages of the seaboard the palm and olive are intermingled in shady groves, presenting a charming picture by their varied forms, the hundred details of the undergrowth, and the aspect of houses and ruins scattered amid the surrounding verdure.

But the natives of Tripoli lack the skill required to extract the oil from their olives, so that this plant possesses little importance in the general movement of trade. Their chief resource are their date-palms, although certain oases south of the Great Syrtis have nothing but the wild plant, which grows in clusters and yields an indifferent fruit, consumed chiefly by the animals. In these districts are

also met a few date-palms with bifurcating stem, like that of the dum-palm, a plant also represented in the flora of South Tripolitana. The finest dates are said to be those yielded by the plantations of Gharia, in the upland valley of the Wady Zemzem, although these are still inferior to those of the Suf district in Algeria and of the Wady Draa in the south of Marocco. The number of dates cultivated in the whole of Tripolitana may be estimated at about two millions. Whether in the oases of the Jebel-es-Soda or of the Red Hamâda, or on the steppes skirting the Mediterranean seaboard, the plantations are everywhere formed of trees set close together, the groves thus producing at a distance the effect of verdant islands.

Fig. 14.—Oases and Arabian Lands of Tripolitana.
Scale 1 : 7,000,000.




The requirements of irrigation and of the fertilisation of the female plant by the male pollen, in many places also the necessity of common defence against the attacks of marauding tribes, have caused all the dates of each district to be grouped in a compact mass. After leaving certain groves containing a hundred thousand plants in the closest proximity, the traveller does not again meet with a solitary specimen during a march of several hours, or even for days together. During the expedition of the brothers Beechey, a single palm was visible on the coast of the Great Syrtis near Cape Misrata, and when Barth visited the same district fifteen years afterwards, the tree had disappeared.

Tripolitana also possesses, especially in the beds of its wadies, vast forests of the talha, or Arabian acacia, which always grows in a scattered way, but none the less presents a pleasant spectacle to travellers emerging from the bare and stony hamâdas. Some of these acacias attain the proportions of almond trees, but on the outskirts of the forests, and especially on sites with a northern aspect, they dwindle to mere shrubs. The gum distilled by them is of excellent quality, fully equal to that of Senegambia, but it is little used in the country.

The sodr (*zizyphus lotus*), so common that it has given the name of Sodriya to a whole district in west Tripolitana, the mastic, batum (pistachio), and most of the shrubs found in the thickets of Southern Italy, also belong to the wild flora of this region, where they often clothe the slopes of the hills with a dense mantle of verdure. The tamarisk and the *rtem* or *retama* grow on the slightly saline low-lying grounds. The *shi*, or wormwood, to which camels are specially partial, is dotted in tufts over the stony steppes; and the *lecanora desertorum*, a species of edible lichen, covers certain tracts here and there on the plateau of the desert. Characteristic of these plateaux is also the *beshna*, a species differing in no respect from the alfa grass of Algeria, and which, like it, has also begun to be exported for the European paper-mills. The natives have a notion that they can get rid of their ailments by transferring them to this plant. Camel-riders are sometimes seen dismounting and kneeling over a tuft of alfa, which they carefully knot together, hoping thereby to secure their maladies to the stalk.

### Fauna of Tripolitana.

The fauna of Tripolitana differs from that of the surrounding regions only so far as it is less rich in species. Wild and domestic animals are here less numerous than in Mauritania. The uplands are infested neither by lions nor panthers, while the lack of permanent rivers has caused the crocodile to disappear, just as in the interior the disafforestation of the country has proved fatal to the elephant. The steppes would be admirably suited for ostrich farming; but it is uncertain whether this animal still survives in this region. If any are to be found, it can only be in the less accessible districts of the Red Hamâda. Recently a few ostriches have been imported from Burnu, and some Italians, although with little success, have turned their attention to the breeding of this "winged racer," which could thrive nowhere better than on the extensive plains of Jefara.

In some districts, notably the Jofra oasis and the coastlands around the Great Syrtis, the carnivora are represented neither by the hyæna nor even by the jackal, the only wild beasts of this class being the fennec and the fox. Hares, rabbits, a few species of gazelles and antelopes, marmots with long white-tufted tails, the African moufflon or wild sheep, such is the game that most abounds in Tripolitana. The stony hamâdas are intersected in every direction by the tracks of gazelles, much narrower than the paths laid down by man, and thoroughly cleared of any sharp stones, that might wound the delicate feet of these graceful creatures.

Amongst the reptiles more commonly met is the sand gecko, which is furiously

attacked wherever met by the natives, who think it not only poisonous but also endowed with magic powers. The cerastes, or horned viper, is also much dreaded, although never dangerous in winter, or when the sun is not at its full strength. It is a very timid animal, cowering in the sand, to which it has become assimilated in colour, and numbed at the least lowering of the temperature. But few birds are met in the thickets of Tripolitana, except during the few days of migration north and southwards in spring and autumn.

Of domestic animals the most useful are the camel and ass, employed as pack animals. Both cattle and horses are rare and of small size. In some oases scarcely two or three steeds are to be met, and these are reserved for the chiefs, who are very proud of their mounts. This absence of horses is largely due to the Turkish pashas, whose policy it has been to deprive the restless Arab tribes of their cavalry. This was a sure way of "clipping their wings," and reducing them to a state of tranquillity. Nor are dogs at all numerous; except in the coast towns, scarcely any breed is to be met besides the *slughi*, or Arab greyhound. The fat-tailed sheep, the only variety in Tripolitana, still wears a woolly coat, notwithstanding the heat of the climate. The fleece does not disappear until we reach Fezzan, south of the Jebel-es-Suda. Much more common than the sheep are the goats, to which the scrub affords a sufficient nutriment. According to native report, those that browse on the retama plant give an intoxicating milk.

## Inhabitants of Tripolitana.

As in the other "Barbary States," as they were formerly called, the population of Tripolitana consists of Berbers and Arabs, the latter name comprising all the descendants of the invaders who settled in the country at the time of the first Mussulman conquest, and again during the great Hilalian immigration in the eleventh century. The Berbers are probably the more numerous, representing as they do the aboriginal element. But in several districts they have laid aside their primitive dialects, having become assimilated to their conquerors in speech, as well as in religion and usages. Hence many tribes of undoubted Berber descent pass nevertheless for Arabs. This incessant process of assimilation was already noticed by Ibn-Khaldun in the fourteenth century. Even in most of the oases and rural districts, where Berbers and Arabs constitute distinct ethnical groups, each with its own name and special organisation, both have become so intermingled by family alliances that it becomes impossible to detect the least physical difference between them. In all the tribes alike are met persons characterised by Negroid, Semitic, or Caucasic features. But the colour of the skin is almost without exception yellowish or bronzed, the hair black and kinky, the body slim, with shapely limbs. As amongst all North African peoples, the women are relatively of much smaller size than the men, the discrepancy between the sexes being in this respect much greater than amongst Europeans.*

The Berbers of Tripolitana proper who appear to have best preserved the

* Gerhard Rohlfs, "Kufra; Quer durch Afrika."

primitive type are the inhabitants of the Ghurian and Yefren highlands; of all the native tribes these have also most valiantly maintained their independence. The Jebel Yefren is still the hotbed of all insurrectionary movements, and these natives are fond of relating with pride the heroic deeds of their forefathers, notably those of their last hero, Rhuma, who maintained for years a guerilla warfare against the Turks. In military prowess, as well as love of work, the care bestowed on their fields and orchards, intelligence and natural vivacity, these are the "Kabyles" of Tripolitana. The contrast is very striking between them and the sluggish peoples of the lowlands.

The Jebel Nefusa, north-west of the Jebel Yefren, is also inhabited by Berber tribes, some of whom still speak a dialect closely allied to that of the Tuaregs. But most of the natives are probably descended from those Luata or Liuata, that is, the ancient Libu or Libyans, who were the masters of the land before the Arab invasion, and who, like the Arabs themselves, came originally from the east to seek new homes in north Africa. In one of the Jebel Nefusa tribes, as amongst the Aulad Nail of Algeria, the young women are in the habit of migrating to the surrounding oases and towns to earn their dowry by the sacrifice of their virtue. Tarik, conqueror of Spain, was a Nefusi, or Berber of the Jebel Nefusa, and he belonged perhaps to one of those tribes which had become mingled with the Christian populations, but professed the Jewish religion. Hence possibly the favour he showed to the Spanish Jews at the time of the conquest. At present the inhabitants of the Jebel Nefusa, although adherents of Islam, belong to the "fifth sect," being Ibadhites, like the Beni-Mzab of Algeria.

Amongst the Berber highlanders, some tribes still dwell in underground villages, and according to Duveyrier, these troglodytes have given their name to the Jebel Garian, or "Cave Mountains," commonly but wrongly called the Jebel Ghurian. A square space 25 to 30 feet deep is excavated in the sandy or limestone rock, and on either side of this pit are opened the vaulted chambers in which the inhabitants reside. A well sunk in the enclosure supplies them with water, which usually lies within a few yards of the surface. Communication is effected with the outer world by means of a winding passage protected at either end by a strong gate, and through this the people return every evening to their retreat, with their animals and poultry.

Before the arrival of the Arabs and the spread of Islam, the troglodytes raised altars to the gods. In the vicinity of the mountains, and especially round about the Jebel Msid on the upland Tar-hóna plains, religious monuments have been preserved, dating undoubtedly from pre-Arab times, and attributed to the ancestors of the Berbers. They are constructed of megalithic blocks resembling those of Britanny, Andalusia, and South Algeria, but presenting some distinctive features. The Berber monuments of Tripolitana take the form of porticoes averaging 10 feet high, made of two square pillars resting on a common pedestal and supporting a quadrangular block, which exceeds in height the vertical stones on either side. Between the latter the opening would be too narrow, says Barth, for a single person to squeeze through, unless he was extremely thin.

At the western foot of the Jebel Mnid of Mesellâta there are six of these cromlechs, some still standing, others overturned, near the ruins of a temple. The almost Roman style of the building leads us to suppose that the architects of the megalithic structures lived at a time when the country was still under the sway of the Italian conquerors, and a sculptured animal on one of the porticoes recalls the Roman wolf. Nevertheless some authorities, far from regarding these "biliths" and "trilithe" of Tripolitana as religious edifices, look on them merely as the framework of gateways constructed, as was usual, of materials far more durable than the walls of the houses. Hence the latter, mere earthworks, crumbled away to the level of the ground, while the former remained standing, and thus assumed the form of cromlechs.

## The Arabs of Tripolitana.

If the Berber element prevails on the highlands and plateaux, the Arabs, of more or less mixed stock, have acquired the ascendancy on the plains. These nomad tribes naturally prefer the vast steppe lands, where they can move about with their flocks, changing their camping-grounds at pleasure, according to the abundance of water and pasturage. The Arab has no love of the forest, which he fires, in order that timber may give place to herbage, and his glance be not obstructed by the leafy branches. Thus the Tar-hôna plateau, between the Ghurian highlands and the Mesellâta hills, has been completely wasted, not a single tree being spared.

Like all other nomad populations, which by their very dispersion break into a multitude of distinct groups, differing in their traditions, customs and interests, the Arabs of Tripolitana are divided into a number of tribes, differing from one another in some respects, although preserving for generations the memory of their common ancestry. Some of these communities are distinguished by their numbers, power, and noble descent. In the east one of the most important tribes is that of the Aulad Slimân, zealous members of the Senûsiya brotherhood, who roam the steppes round the shores of the Great Syrtis, and who have pushed their warlike expeditions to the Tsad basin beyond the desert, like the Nasamon wanderers mentioned by Herodotus.

Farther south the Aulad Khris have partly taken possession of the Zella oasis, and in the neighbourhood of the Harûj gorges have afforded a refuge to kindred tribes escaping from the oppressive measures of the Turkish pashas. The Urfilas, or Orfellas, who occupy the hilly districts at the eastern foot of the great plateau, are the most formidable fighting element amongst the Arabs of Tripolitana. It is not long since they were even accused of kidnapping children to devour them. They call themselves Arabs, and speak Arabic; but it is evident, from the style of their dwellings, their agricultural practices, and the names of their sub-tribes and villages, that the fundamental element of the population is Berber.*

To the north-west, in the direction of the capital, follow less numerous and more

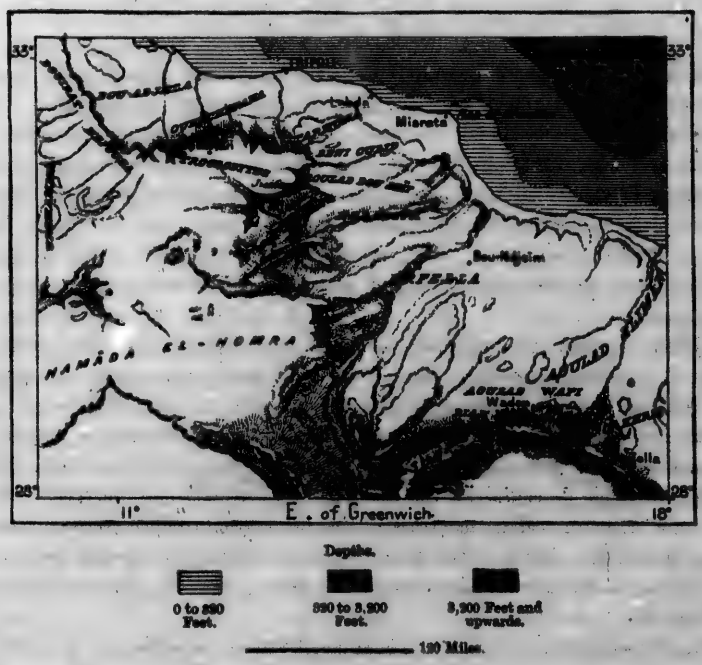
* Lyon, "Narrative of Travels in Northern Africa."

peaceful tribes, such as the Kedadifas, Aulad Bu-Seifs, Sfradnas, Aulad Yusefs, Hamadats, and Tar-hônas. Of all these kindred clans, the most respected are the Bu-Seifs, who reside chiefly about the Wady Sufejin and its tributaries. In order to preserve intact their social usages, the Bu-Seifs allow no strangers to remain overnight in their encampments, but assign them a separate tent in the vicinity, where, however, they are entertained with perfect hospitality. This tribe breeds the finest camels in the whole of Tripolitana, and in all their tents the younglings are treated like the children of the family.

West of Tripoli, towards the Tunisian frontier, the chief tribes are the Wershe-

Fig. 16.—Inhabitants of Tripolitana.

Scale 1 : 7,800,000.




fanas, Ben-Ajelas, and Nuails. Till recently conflicts were frequent in the border lands between the two states, and the victorious or defeated clans were continually displacing their camping grounds according to the vicissitudes of battle.

Although the art of writing has been lost among the Berbers of Tripolitana, most of these communities are designated on the ground or the face of the cliffs by complicated marks or signs, which must be regarded either as abbreviated names, or symbolic marks, analogous to the totems of the North American Indians.

There are also some Arab tribes held in great veneration, not on account of their pure morals or any special merit, but in consequence of the pretended sanctity

of their origin. These are the so-called *Shorfa*,* that is, descendants of the Prophet, although the family genealogical tree is seldom authentic. It is enough for a woman to marry a *Sharif*, even though immediately afterwards repudiated by her husband, for all her children, and children's children to take this honoured title. The "Marabutic" families of Tripolitana also claim to have come from the west, whence the Shorfa are said to have migrated. Anyhow, it appears to be quite certain that a great many Arab tribes advanced as far as the Atlantic seaboard during the first years of the conquest. Since that epoch a general movement in the opposite direction has been effected, so that those tribes are regarded as of noblest blood who during their migrations have twice traversed the route between Mauritania and the eastern provinces of North Africa. Such groups are even more esteemed than if they had come straight from the holy cities of Arabia.

At present this retrograde movement is more active than ever. The Algerian Shorfa clans, with their wives, children, and herds, have already emigrated in thousands to Tripoli, in order to escape from the yoke of the "infidel." The Khwans of the religious brotherhood of the Senûsiya, who have become so numerous in the oases of Tripolitana, are also immigrants from the same region. After the occupation of Tunisia by the French troops, several unsubdued tribes sought a refuge on the plains of Jeffara, west of Tripoli.

## The Negroes.

Next to that of the Berbers and Arabs, the largest section of the population is certainly the Negro element. Amongst those who call themselves Arabs, or even Shorfa, there are thousands who betray their black descent in the colour of their skin and hair, the form of their features alone attesting mixture with the white Semites. Commercial relations are so frequent and regular between Tripoli and the interior of the continent, that there is nothing surprising in the presence of numerous Nigritians on the Mediterranean coastlands. The great majority, however, of those now living in Tripolitana have been forcibly brought thither as slaves. Formerly not a single caravan arrived from Sudan unaccompanied by a gang of captives. We must therefore reckon by hundreds of thousands the number of blacks who have thus been imported into Tripoli, either to remain in the country or to be forwarded thence to Egypt or Turkey. Although at present no longer carried on openly in the capital of the vilayet, the slave trade has not yet by any means totally ceased. On hearing of the arrival of a caravan in the southern oases, the dealers in human flesh instruct their agents to obtain the best terms for their living merchandise, which never fails to find a purchaser. At the same time both Negroes and Negresses, at least in the capital, may at any time demand a letter of emancipation, and this document is never refused. Many of these freedmen remain in the houses of their former masters, who are still looked up to as patrons and protectors even by those who withdraw from their roof to live

* Shorfa or Shurafa is the plural of Sharif, properly a noble or grandee, but usually restricted to the real or presumed descendants of Mohammed.

independently. On all festive occasions they return to share in the family rejoicings.

The great majority of the Negro population resides neither in the capital nor in any of the other towns of the province. Faithful to their racial instincts, they have grouped themselves in small hamlets, where they live in huts made of palms, branches, and reeds. Neither the houses of the civilised Turks nor the tents of the nomad Arabs suit the habits of communities still following the same mode of life as their fellow-countrymen on the banks of the Niger and Lake Tsad. Although familiar with Arabic, most of them still speak their native dialects. From the Niam-Niam territory to that of the Fulahs, all the regions of Central Africa are represented in Tripolitana by their respective languages, although the majority, or about two-thirds of the population, converse in the Hausa already current throughout Western Sudan. In many districts a stranger might fancy it had also become the prevailing language of Tripolitana, owing to the incessant chattering of the Negroes, as contrasted with the less voluble Arabs and Berbers. But it is not likely that the Hausa tongue will maintain itself for many generations in the country; for however correct the social life of the local black communities, however touching their devotion to their families, the Negro women are rarely very prolific, while infant mortality is very high. Yet in other respects the women would appear to resist the climate better than the men, and many even live to a great age.

### The Turks and Kulugli.

The Turks, who since 1835 enjoy not only the sovereignty but also the effective power, are in a minority even in the capital. Nevertheless their language has gradually become predominant amongst most of the "Tarabulsiyeh," the preponderating influence of the administration having caused the official idiom to prevail over the Arabic. Yet the Turks are still strangers in the land, holding aloof from the rest of the inhabitants, from whom they are already somewhat distinguished as "Malekits" in the midst of "Hanefite" populations. They are, moreover, careful to follow the fashions of Constantinople, and by an affected dignity of carriage they endeavour to sever themselves from the populace, to which as judges and administrators they nevertheless condescend to sell justice and protection. But for all their airs of superiority, their passion for strong drink has rendered them the most degraded section of the community.

More respectable are the Kulugli, that is, the descendants of Turks and Moorish or other women of the country, whether black or white. These half-castes pay no taxes, but are required to serve as irregular troops at the first summons to arms. Since the immigration of so many Algerian families, escaping from French rule, the Turks usually select their wives amongst the women of this class, who are distinguished from the rest of the population by their honesty, sobriety, and correct morals. Many of the young Algerian women are, moreover, noted for their personal charms, in this respect contrasting favourably with the

native Moorish girls, whose reputation is also so bad that an alliance with one of this class is looked upon almost as a disgrace. But however respected the wives of the Turkish officials, their sons are seldom destined to hold high positions in the administration. After serving in the gendarmerie or some other corps, most of these Kuluglis withdraw to the rural districts surrounding the capital, where they gradually merge in the rest of the population.

### The Jews, Maltese, and Europeans of Tripolitana.

In Tripolitana, as in the other Barbary states, the Jews are essentially the despised race. Yet they are amongst the oldest inhabitants of the country, having settled here under the Ptolemies. During the early years of the Roman administration they had secured the special protection of the Emperor Augustus. An encampment west of Mukhlar, on the coast of the Great Syrtis, still bears the name of Yehudia, or "Jewry," in memory of the Israelites who peopled the country before the arrival of the Arabs.

In the Jebel Ghurian the Jews occupy, like the Berbers, certain underground villages, in which, according to Lyon, their dwellings would appear to be cleaner and better excavated than those of their neighbours. These troglodyte Jews, the only artisans in the country, are exempt from the abuse and bad treatment to which their co-religionists are elsewhere subjected in Tripolitana. In the capital, where they number about 8,000, they occupy a separate quarter administered by a "political rabbi," ignorant of the Pentateuch and of the Talmud, but armed with the right to impose taxes, fines, the bastinado, and even issue interdicts against private families. Twice enslaved, the Jews of Tripoli are very inferior to those of Mauritania in intelligence, hence adhere far more tenaciously to the old orthodox practices and hereditary customs.

A few Koptic families, who arrived with the Arabs, have maintained themselves in distinct groups in Tripolitana, where, however, they are not sufficiently numerous to exercise the least social influence. More active, although also numerically weak, are the Jerâba Berbers, immigrants from the Tunisian island of Jerba. These are the richest dealers in the bazaar of Tripoli, although obliged to compete with 4,000 Maltese, who are Arabs by descent, Christians in religion, British subjects politically, partly Italians in speech, and French in education. This half European colony is yearly reinforced by true Europeans, mostly Italians, guests who hope soon to be masters, and who are meantime establishing schools to diffuse their national speech. In 1884 the Italians numbered 800 out of a total of 1,000 continental Europeans.

### Topography.

West of Mukhlar, on the Tripolitan shores of the Great Syrtis, there is not a single town, or even a permanent village comprising more than a few hundred huts. For a space of some 300 miles nothing is to be seen except groups of tents,

a few cabins and shapeless ruins. But at least one "large city" formerly stood on this seaboard, the place in mediæval times by Abu Obeid Bakri named *Sort*, whose ruins are still known to the Arabs under the appellation of *Medinet-es-Sultan*, or "City of the Sultan." Sort, or Sirt, was formerly the starting-point of caravans bound for the interior of the continent through the oases of Wadan and Murzuk. But being unable to defend themselves against the attacks of the nomad Bedouins, its merchants were compelled to choose another route to the east of the plateaux, traversing oases which were inhabited by settled agricultural communities. Amongst the ruins of Sort are the remains of some Roman structures, as well as aqueducts and reservoirs still in a good state of repair.

Like the coastlands themselves, the whole of the steppe region stretching thence southwards is destitute of towns, although here the wells and depressions in the wadies, where water collects in greatest abundance, serve as natural trysting-places for the surrounding nomad pastoral tribes. Towns, properly so called, are found only at the foot of the Harûj and Jebel-es-Soda, where the running waters are copious enough to feed the palm groves and irrigate the cornfields. Even the natural oases following in the direction from east to west under the same latitude as those of Aujila and Jalo are uninhabited. Jibbena, to the east, Maradé, in the centre, and Abu Naim, farther west, are the three chief depressions whose spontaneous vegetation seems most likely to attract future agricultural settlers. All these districts stand at least about 150 feet above the level of the sea.

Towards the north, in the direction of the Great Syrtis, as well as on the opposite side towards the spurs of the Harûj, the surface is broken by limestone rocks, witnesses of a former plateau, weathered or perhaps eroded by running waters, and worked in all directions into the form of columns and fantastic structures. These rocks abound in fossils, in many places constituting the whole mass, while the sands of the oases are strewn with countless shells and foraminiferæ. In the east, towards the Aujila oasis, the view is obstructed by dunes which are amongst the highest in the whole region of the desert, some rising to a height of about 530 feet. The three oases abound in palms; which, however, with the exception of a few thousand, all grow wild, or have lapsed into the wild state, springing up like scrub, and yielding a poor fruit without kernel. In the Abu Naim oasis there are probably no male dates, while the female plants are not fertile. All three oases produce a species of crab or wild apple-tree, whose fruit is no bigger than a walnut.

The neighbouring tribes, or bands of marauders roaming over the steppes, come occasionally to gather the dates and graze their camels in the grassy hollows of these oases. Jibbena and Maradé were still inhabited down to the middle of the present century; but in 1862 only a solitary person remained in Maradé, a slave left to watch the raiders, and report their depredations at the annual visit of his masters. The establishment of a colony at the fountains of Abu Naim is prevented chiefly by the bad quality of the water, which is very sulphurous, or charged with the sulphate of magnesia. Doubtless the time will come, says Rohlfs, when a visit to these sulphur baths of east Tripolitana will be recommended by European physicians as

highly efficacious. Sulphur beds are numerous in this region, and a little to the north of the oasis are situated the mines whose produce is exported from the little port of *Braiga*.

The oasis of *Zella*, or *Zalla*, lying in a rock-enclosed cirque at the northern foot of the Black Harûj, is one of the most densely peopled in the whole of Tripolitana. In 1879 it contained about twelve hundred persons, members for the most part of the Arab tribe of the Aulad Khris. The cirque has a length east and west of 7 miles, with a breadth of 3 north and south. With the Tirsa oasis lying farther north, it contains about a hundred thousand date-palms. At the time of Beurmann's visit, in 1862, Tirsa was still inhabited, but has since been abandoned, probably owing to the dangerous proximity of the Orfella Arabs.

This tribe, say the Aulad Khris, arrived ten centuries ago from Egypt, and after driving out the Christian populations, became the guides and escorts of caravans bound for Central Africa. Edrisi relates that their town was the chief station between Sort and the Zwila oasis in Fezzan. But the "City of the Sultan," as it was called, has disappeared, and at present the chief outlet for the exports of the country lies much farther west, at the port of Tripoli. The people of Zella take no part in this traffic except by devious ways. At the time of Rohlf's visit, in 1879, they had for several years been compelled to avoid the direct route to Tripoli, fearing the vengeance of the Orfellas, whose territory lay across their path, and some fifty members of which tribe they had killed in a fray.

On the other hand, they venture freely far into the southern wilderness, and to them in recent times has been due a real geographical discovery, that of the inhabited oasis of Wau-el-Namus, which no European has yet visited. Of all the Tripolitan Arabs, the inhabitants of Zella are the richest in camels. They are also the only tribe still occupied with ostrich farming, although since the journey of Hamilton this industry has fallen off. In 1879, two of these birds, fed on dates, yielded to their owner a net yearly profit of from £6 to £8.

Although larger and more populous than that of Zella, the *Jofra* oasis is far less rich in cultivated palms. Scarcely a twentieth part of the 800 square miles comprising its whole area is under cultivation for dates, corn, or fruits. Its very name of *Jofra*, from *jof*, stomach, indicates the form of the oasis, which is an elongated cirque stretching east and west, and everywhere encircled by hills rising 650 feet above the plain. A range of heights, running north and south, that is, in the direction of the short axis of the cirque, and interrupted at intervals, divides the oasis into two equal parts, each with its gardens, palm groves, grassy steppes, stony wastes, and saline lakes. Sandy gorges, in which water is rarely seen on the surface of the ground, converge towards the north of the twin oases in the Wady Missifer, which, under another name, winds through the plain as far as the Great Syrtis.

Although situated on the Mediterranean slope, Jofra belongs administratively to the province of Fezzan. Its inhabitants long maintained their independence, paying no taxes either to Tripoli or to Mursuk. At that time they constituted a small but sufficiently powerful republic, which afforded a refuge to the oppressed

from all the surrounding lands. The population, at present estimated at six thousand, was then much more numerous.*

In some of the Jofra palm groves the water is of exquisite flavour; nevertheless the towns have been founded in the vicinity of the saline springs. Notwithstanding this disadvantage, the oasis is one of the healthiest in the desert region. Ague is unknown, and ophthalmia rare, while other maladies common in the oasis of Fezzan never penetrate to Jofra. But although healthy and vigorous, the natives, whether Berbers or Arabs, have a sickly look, with yellow parchment skins. Men are seldom met amongst them distinguished by the regularity of their features. Although the Arabs, in their quality as the "chosen people" and followers of the

Fig. 16.—Jofra Oasis.

Scale 1: 700,000.

Prophet, regard themselves as superior to the Berbers, they none the less recognise the rights possessed by them as the first possessors of the soil. This position of landowners has been maintained by the Berbers so exclusively that the Arabs are able to acquire possession of the trees alone; hence at times feuds and frays, requiring the intervention of the Turkish troops stationed in Fezzan. The races are doubtless so intermingled that it is difficult any longer to discriminate between the two elements in Jofra. Nevertheless, a traditional convention enables the Berbers to safeguard their primitive proprietary rights. The son, whatever the origin of his mother, is always regarded as belonging to his father's nationality.

The gardens surrounding the towns of the oasis are admirably cultivated, and yield in abundance cereals, tomatoes, garlic, onions, and other vegetables. During

* Lyon, "Travels in Northern Africa."

harvest time the arms of the cultivators and their slaves are insufficient to garner the crops, and then immigrants from Fezzan come to lend a hand as labourers for a few weeks. Enriched by agriculture, the inhabitants of the oasis take no part in trade, like the natives of Murzuk, Ghadames, and Ghât; but the produce of their fields finds a market through the medium of other Arab tribes. Ostrich farming, pursued with success at the beginning of this century, has since been given up.

The present capital of the oasis is the walled town of *Sokna*, which contains about one-third of the whole population, and at times gives its name to the whole district. Its inhabitants belong almost exclusively to the Berber race, and still speak the old language, mixed, however, with many Arabic expressions. *Hon*, situated nearly in the centre of Jofra, in the eastern section of the oasis, is shared by Berbers and Arabs in common. It is the most populous town in the country, and at the same time owns the greatest extent of cultivated lands. *Wadan*, lying farther east at the foot of the hills of like name, is a "holy city," thanks to its Shorfa inhabitants, who enjoy the twofold honour attached to the descendants of the Prophet and to the families that have emigrated from Marocco. Built in amphitheatrical form on a cliff, Wadan presents a very picturesque appearance. It is an old place, already mentioned centuries ago by the Arab geographers, and formerly gave its name to the whole oasis. According to Rohlfs, its walls would appear to stand on Roman foundations.

Following the route which leads from the Jofra oasis towards Tripoli around the eastern foot of the spurs of the plateau, the caravans have selected as their chief station the village of *Bu-Njeim*, occupied by a few Orfella Arab families, who live by trading with the passing merchants and the surrounding pastoral tribes. The wells of Bu-Njeim, lying in a deep depression of the steppe at a height little above sea-level, are visited by the herds of camels for a distance of 60 miles round about. These animals are well acquainted with the roads leading to the watering-place. Every month, and more frequently during the hot season, they proceed in long processions to the Bu-Njeim wells, where they have at times to wait patiently hours, and even days, for someone to water them. All the other wells of the country, as far as the *Beni-Ulid* oasis, belong also to the Orfella tribe.

In this extensive oasis, some fifty villages and hamlets, scattered amid groves of olives and other fruit-trees, are permanently inhabited. Seen from the hills, the valley of the wady, which is of limestone escarpments overlaid with lavas, and ranging from 450 to 550 feet in height, looks like a river of verdure over half a mile in width, and stretching east and west beyond the horizon. The olive groves are divided into innumerable plots by dykes of large stones, which arrest the overflow of the inundations, and at the same time serve to retain the vegetable humus. The walls of the Wady Beni Ulid are sunk in some places to a depth of over 180 feet.

A few groups of huts in the gorges of the plateau at the foot of the hamâda, may perhaps deserve the name of towns. Such are both *Gharias—Gharia-esh-Sherkiya*, the "eastern," and *Gharia-el-Gharbiya*, the "western," situated in the depression of the wady tributary of the Zemzem. These two places, built at a distance

of about 12 miles from each other, and at an altitude of over 1,660 feet, were formerly fortified, as indicated by their name, which means "fortress." The western Gharia still preserves a superb Roman gateway, dating from the time of the Antonines, and presenting a singular contrast to the wretched Arab hovels resting against its massive buttresses. The eastern town is noted for its excellent dates, yielded by plantations irrigated with a brackish water from the underground galleries of the *fogarats*.

*Misda*, lying farther north in the upper valley of the Wady Sofejin, although containing scarcely five hundred inhabitants, is, nevertheless, a more important place than either of the Gharias, owing to its position on a much-frequented caravan route. At this point the road from Tripoli branches off in one direction towards the south-west, where it ascends the hamâda in the direction of Ghadames, in the other southwards, across a series of ridges skirting the eastern edge of the Red Hamâda in the direction of Murzuk. The inhabitants of Misda, of Berber origin, but largely assimilated to the Arabs, although still preserving traces of the national speech, belong entirely to the religious order of the Senûsiya. At the time of Barth's visit, in 1850, the convent possessed no wealth of any kind; at present it owns vast landed estates. In the surrounding districts are scattered numerous ruins of tombs and other Roman monuments.

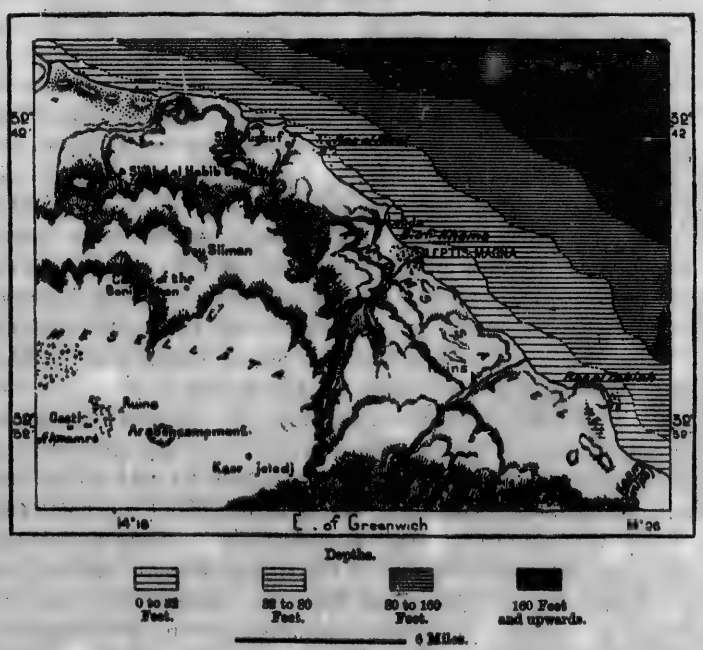
Although, comparatively well peopled, the Jebel Ghurian and the mountains forming its western prolongation have no towns properly so-called, unless the subterranean dwelling of *Zenthan* be regarded as such. In this place the plateau is furrowed in every direction by ravines of slight depth, which serve as streets, on either side of which artificial habitations have been excavated in the rocky cliffs, where the white limestone alternates with yellow marl deposits. The softer parts are removed in such a manner as to give the group of caves the disposition of Moorish houses, with their courts and lateral chambers. But here the different apartments of the several stories communicate by means of an outer ledge or rocky projection, reached either by natural breaks and landings in the cliff, or by flights of steps made of superimposed slabs.

These underground dwellings number altogether from one thousand to one thousand two hundred, giving an approximate population of about six thousand to the town of Zenthan. Above and round about the caves are planted the olive groves, which form the chief resource of the inhabitants, arable lands being rare in this part of the plateau. The fertile soil, which might be washed away by the rains, is retained by walls round the roots of the trees. During field operations and harvest, the troglodytes leave their abodes and camp out, a change which often cures them of maladies contracted in their damp rocky retreats. Next to Zenthan, the two most important centres of population on the Jebel Ghurian, are the hamlets grouped round the Turkish castles of *Kasr Ghurian* and *Kasr-el-Jebel*. The whole district is relatively well peopled, containing, according to native report, as many as "a hundred and one" villages.

But before meeting a city worthy of the name, the traveller must descend to the coast; here stands the capital, *Tripoli*, which, however, is the only town found

along the seaboard between Tunisia and Cyrenaica. Even the upland Tar-hôna plain, whose fertile soil formerly nourished a vast population, has nothing now to show except scattered hamlets and Arab camping-grounds, besides *Misrata*, chief town of the maritime districts. This place, however, which lies near the headland forming the western limit of the Great Syrtis, is little more than an obscure hamlet, although officially described as the headquarters of forty-four villages. A stone house, a modern lighthouse, two or three irregular lanes lined with hovels, and a few huts lost amid the palms and olive groves, make up the town of Misrata, which, nevertheless, possesses some importance as a market for the surrounding towns.

Fig. 17.—The Khoms Coast District, Tripolitana.
Scale 1 : 250,000.




Carpets, matting, goat and camel-hair sacks are amongst the more valued products of the local industry. In Misrata is found the mother-house of the famous order of Sidi-el-Madani, whose founder emigrated from Medina in 1833. In the sixteenth century Misrata was a wealthy place, enjoying a lucrative trade with Venice. It was the starting-point of most of the caravans bound for Fezzan, and even till recently those of Tripoli followed the coast route as far as Misrata in order to avoid the dreaded hostile tribes of the Ghurian highlands.

West of Misrata follows *Sliten*, a town or rather a group of villages scattered amid the palm groves, and partly inhabited by Marabuts and Jews. Then comes the village of *Khoms* or *Lebda*, humble heiress of the ancient *Leptis*, whose

splendour and extent formerly earned for it the title of *Magna*. The site of the original Leptis, founded by refugees from Sidon, is a lofty headland bounded eastwards by a rivulet, the peninsular bluff defended landwards by three lines of fortifications forming the acropolis. The breakwater, protecting the city from the fury of the waves, is constructed of huge square blocks, like those at the island of Ruad, on the coast of Syria. In this part of Africa, remains of the ancient Phœnician architecture are still found in a perfect state of repair. Within the line of quay walls occur at intervals vaulted recesses about 100 feet long, which Barth thinks must have served as dry docks for the Sidonian shipping.

South of the citadel, on the left bank of the rivulet, was gradually developed the new city of *Neapolis*, which at last became one of the largest centres of population in the Old World. Hundreds of thousands of inhabitants were here grouped together, and the edifices of this African city, partly constructed with the surrounding marbles, yielded in richness and beauty to those of Rome alone. But their very ruins have been invaded by the sands, and many of these monuments lie buried under dunes 60 or 70 feet high. A triumphal arch, the date of which is still legible, was here erected by Marcus Aurelius; but most of the buildings of which any traces survive, such as basilicas and mausoleums, were constructed during the reign of Septimius Severus, who was a native of Leptis, and who conferred many privileges on the place. A few columns still lie scattered about, but most of those recovered from the ruins have been removed to England or France, and several now adorn the church of St. Germain des Prés in Paris. Amongst the débris of Leptis have been found three beautiful cameos, besides a trilingual inscription in Punic, Greek, and Latin, a monument bearing witness to the multitude of strangers at one time resorting to this great African city.

Along the east bank of the rivulet stretched another quarter of Leptis, and on the low point of land at its mouth stands a fort, which has often been rebuilt, and which commands an extensive view of the ruined city, and beyond it of the palm and olive groves and amphitheatre of *Messilata* hills, crowned with fortifications, in close proximity to the sea. The whole place occupied a superficial area five times more extensive than that of the modern Tripoli. Although nearly choked with sand, the port of Leptis continues to be frequented by vessels of light draft, nearly all English, which during the fine season here take in cargoes of alfa grass from the neighbouring steppes. According to the natives, olive culture dates back to Egyptian times, and an olive grove on the Messilata heights containing some enormous trees still bears the name of "Pharaoh's Wood."

A carriage route connecting Tripoli with the Messilata district at many points skirts an ancient highway, which may be still recognised by the ruts worn in the hard rock by the chariot-wheels of Carthaginians, Greeks, and Romans. Along this route, the largest group of villages is that of *Tajurah*, whose industrious inhabitants occupy themselves at once with tillage, weaving, and dyeing. Tajurah was formerly a bellicose place, constantly at war with the Knights of Malta.

## Tripoli.

The present capital of Tripolitana has long ceased to rival the ancient Leptis Magna in population or wealth. Tripoli is little more nowadays than a third-rate city amongst those even of the Mediterranean seaboard, although of late years it has been much improved and enlarged. Like Leptis, it is of Phœnician origin. Under the name of *Uayat*, Latinised to *Oea*, it was dedicated to the god Melkart, greatest of Tyrian divinities, and during Carthaginian times rose to considerable power. Of the three cities of Leptis, Sabratha and Oea, the last having been chosen for the capital, ultimately took the general designation of the whole country. Under the form of *Tarabolos*, the Turks have preserved the Greek name of Tripoli, distinguishing it however from its Syrian namesake by the epithet of *El-Gharb*, that is, the "western" Tripoli.

A few ruins of Oea still exist, including deep cisterns and the foundations of ramparts dating from the Phœnician times. There is even one fine building perfectly preserved, besides a triumphal arch dedicated to Marcus Aurelius and Lucius Aurelius Verus. This monument might be easily cleared of the sands in which it at present lies half buried, and of the wretched structures encumbering its pillars, which are formed of huge blocks of marble.

Seen from the sea, the town of Tripoli presents a charming sight. A chain of partly emerged reefs projects in the blue waters nearly two miles from the beach, bearing at its landward extremity a massive tower and fortifications. Westwards from this point the city sweeps round in a crescent form, separated from the shore by a line of ramparts, which are overlooked by a row of white terraced houses, and limited at the eastern extremity of the harbour by the solid buildings, gardens, and palm groves of the governor's palace. Above the mosques and surrounding houses are visible minarets as slim as those of Turkey, and the flagstaffs and banners of the various European Consulates. Above and beyond all are seen the citadel and the "French Lighthouse," completed in 1880.

Leo Africanus, who wrote about the beginning of the sixteenth century, relates a tradition according to which Tripoli formerly occupied a more northerly site, and in his time the foundations of the vanished city were said to be still visible beneath the devouring waves. But this supposed subsidence of the ground can be little more than a simple phenomenon of local erosion, for the present ramparts rest partly on the foundations of the old walls of Oea itself.

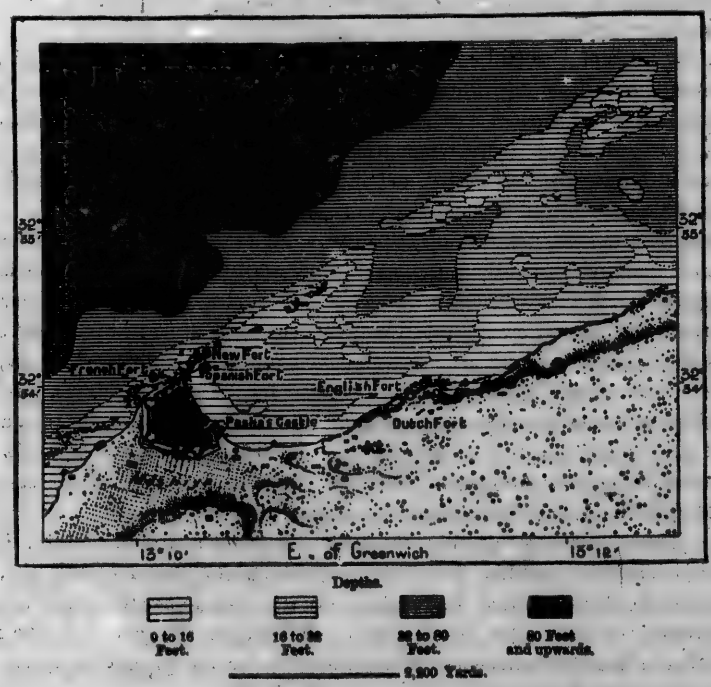
The modern town, which is surrounded by broken ramparts dating from the time of Charles V., presents specimens of the most varied styles of architecture. In the inner labyrinth of narrow tortuous streets, most of the houses, here and there connected above the roadway by vaulted passages, have preserved their Arab physiognomy with their bare white walls and courts enclosed by arcades. Nearly all the structures erected by the Government—barracks, hospitals, prisons, magazines—recall the vast Turkish establishments of like order in Constantinople; the Maltese quarter in its turn resembles the suburbs of some small Italian town; while the Marina is lined by sumptuous mansions like similar thoroughfares in the

large European seaports. Even the architecture of the Niger regions is represented in this Mediterranean city, in several of whose ruins are grouped huts roofed with branches, like those of Western Sudan. The Bedouins of Tripolitana have learnt this style of building from their Negro slaves.

Although still a very dirty place, muddy and dusty in turn, or both simultaneously, Tripoli has been much embellished since the middle of the present century. The *hara*, or Jewish quarter, still remains a labyrinth of filthy lanes and alleys; but a central boulevard now intersects the old town from end to end; the bazaar, occupied by Maltese and Jerâba dealers, has been enlarged, and new suburbs

Fig. 18.—Tripoli.

Scale 1 : 15,000.




developed amid the surrounding gardens. Artesian wells have even been sunk to supply the deficiency of good drinking water, the contents of the cisterns being usually insufficient for more than six or seven months in the year. But hitherto the borings have yielded nothing but a brackish fluid. The urban population has considerably increased, now numbering about thirty thousand souls, amongst whom are comprised four thousand or five thousand Europeans, mostly Italians and Maltese. The natives of both sexes wear nearly the same costume, the only difference being the different arrangement of their *hauk* or toga. Three of these togas—gauze, silk, and wool—are commonly worn by the women one over the other.

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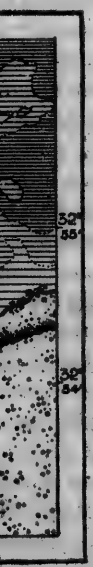


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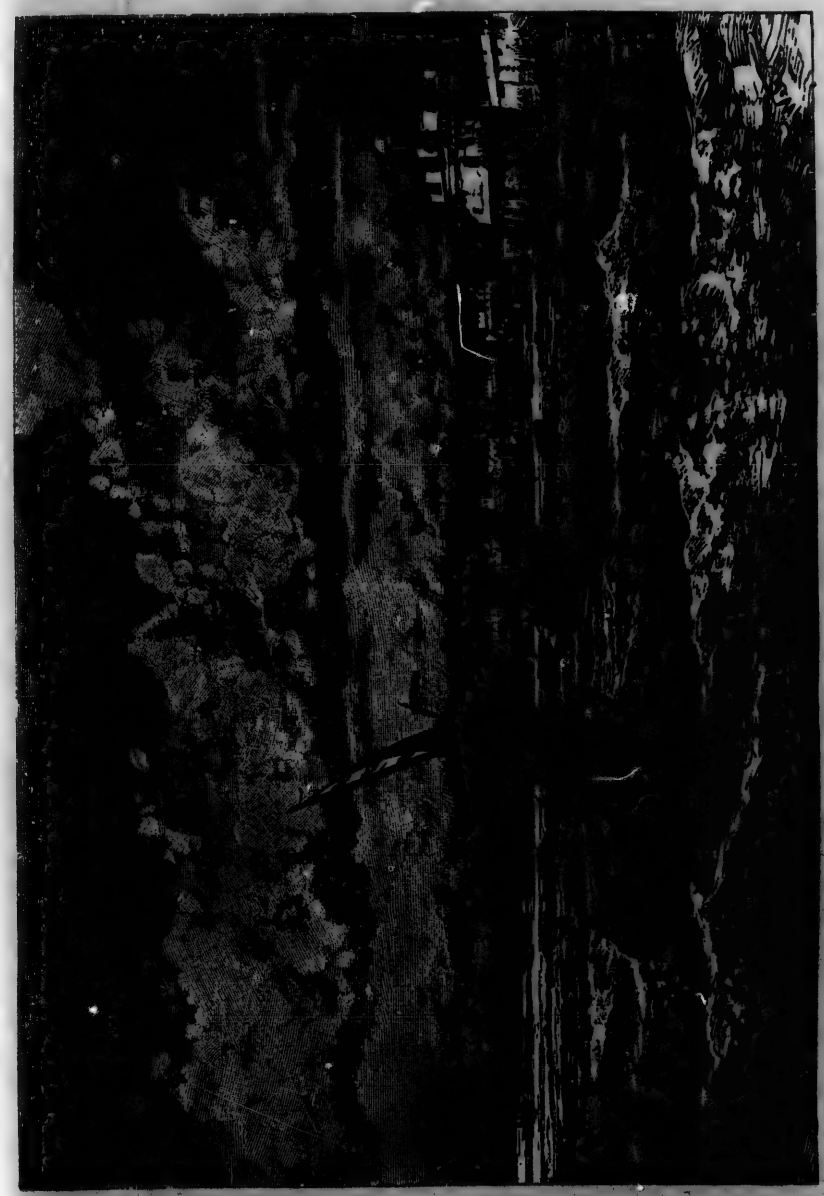
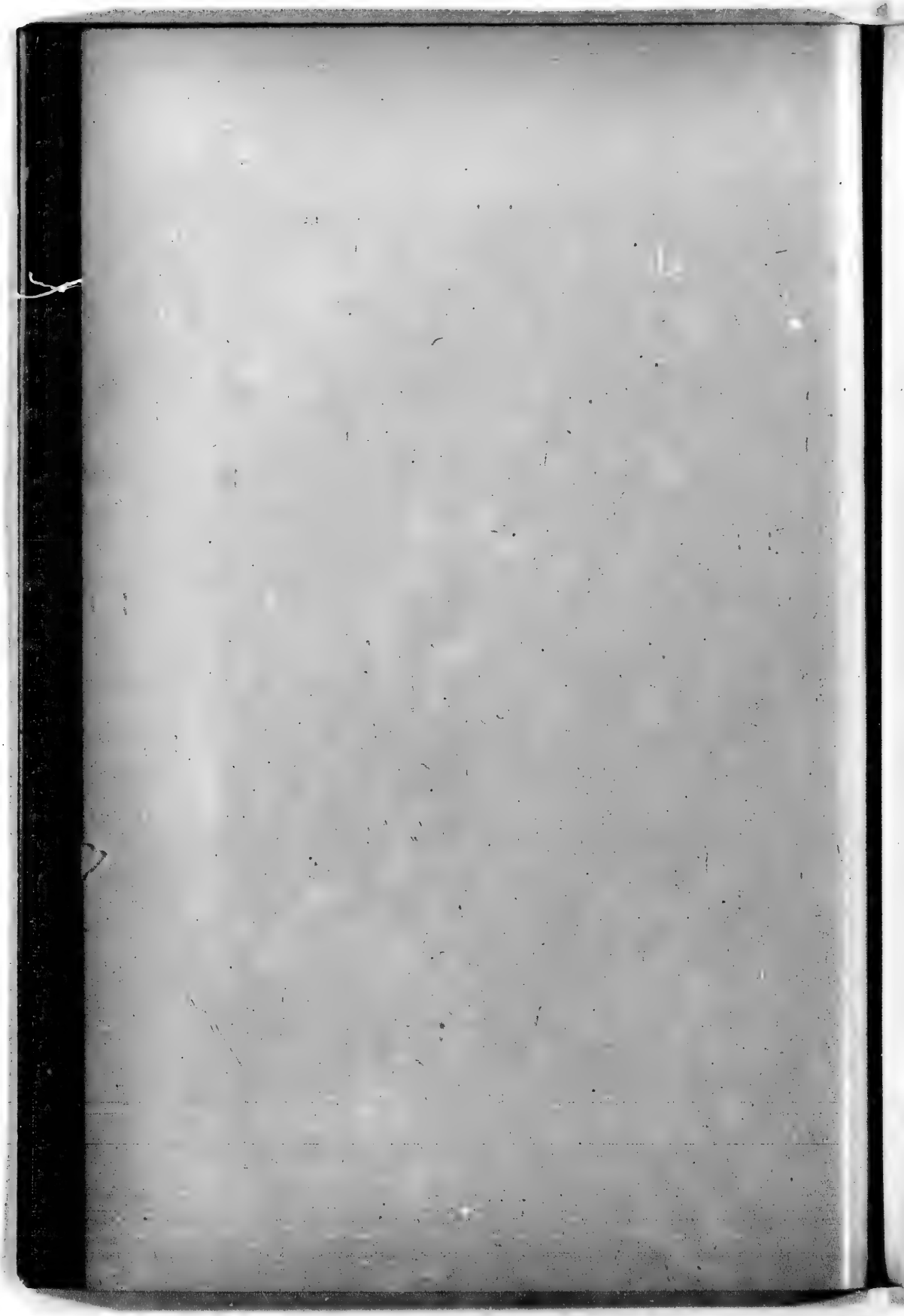


TRIPOLI FROM THE ROADSTEAD.



The so-called Meshiya, a belt of palm-groves encircling the city, with an average breadth of 9 miles, is itself a populous district, containing, according to Krafft, about thirty thousand inhabitants. Here the emancipated Negroes from Bornu and the Niger states have resumed the same mode of life as in their native hamlets; here are also nomad Arabs, who pitch their tents beneath the palms near some holy shrine; Maltese dealers, whose stalls or inns are usually established at the cross roads; retired Europeans or Turks occupying some pleasant country seat amid the verdant and flowering thickets. But in some places the Meshiya is threatened by the sands of an ancient marine inlet. Many gardens are already covered with dunes from 100 to 130 feet high, and elsewhere the trunks of the trees have been swallowed up, leaving nothing but the topmost branches mournfully beating the sands in the breeze.

To this zone of dunes the people of Tripoli improperly give the name of "desert," through a sort of vanity leading them to fancy themselves near neighbours of the Sahara, from which they are nevertheless separated by the whole region of steppes and by the Ghurian highlands. At the same time Tripoli and its outskirts present in many respects the aspect of an oasis, beyond which the caravans have at once to follow the track of dried-up watercourses. In the Meshiya itself innumerable wells have been sunk to an extensive underground reservoir, which has never been pumped dry by the irrigation works, and which near the coast lies within 3 or 4 feet of the surface. The water wells up spontaneously through the sands left exposed during exceptionally low neap tides.

For the internal trade with the Tsad and Niger basins, Tripoli is more favourably situated than more western cities, such as Tunis, Bona, Algiers, and Oran, inasmuch as it communicates directly with the regions draining to the Gulf of Guinea. Two main routes, one through Murzuk, the other through Ghadames, and connected together by intermediate byways, enable Tripoli to maintain constant relations with the towns of the Bornu and Hausa states. Before the year 1873, the caravan traders of Ghadames enjoyed a monopoly of the commerce with these countries; but since then the Jewish merchants of Tripoli have organised a caravan traffic from their very doors, based on the principle of co-operation with the tribal chiefs escorting the convoys, who receive half profit on all the transactions, and who on their part render a faithful account of all their operations.

During the year from Tripoli are usually despatched from six to eight large caravans, each comprising from one thousand to three thousand camels, and always escorted by hundreds of armed Arabs, who venture fearlessly into hostile territories. The journey generally takes between two and three months to the first towns in the north of Sudan. Several merchants are associated to a greater or less extent in the common speculation; but they are seldom able to realise their respective shares in the profits under two years, for it takes a long time to negotiate on advantageous terms an exchange of the cotton goods, Maria-Theresa crown pieces and other European objects for such native products as ostrich feathers, ivory, gold dust, and slaves, and the Tripoli dealers have often to send their wares to many markets before

finding purchasers. The return trip is reported from Sokna or Ghadames by couriers mounted on meharis, and fresh negotiations are then opened with the European dealers in anticipation of the approaching caravan.

Since Wadai has voluntarily suspended its commercial relations with Egypt, and especially since the revolt of the Upper Nile provinces from the Khedival rule, a fresh current of traffic has been established across north-east Africa through Dâr-For and Wadai to Tripoli, from which, instead of from Alexandria, Kordofan procured its supplies and materials of war during the rebellion of the late Mahdi. At the same time the chief source of prosperity for Tripoli of late years has been its export trade in alfa grass, of which about thirty-six thousand tons were shipped for Europe in 1875.

Besides its monopoly of the direct commercial exchanges with the interior of the continent, Tripoli also enjoys the advantage of a favourable geographical position at a central point on the Mediterranean seaboard in proximity to Malta, Sicily, and Southern Italy. Nevertheless its trade, although six times more than that of the whole of Tripolitana in 1825, is much inferior to that either of Tunis or of Algiers, towns which have to supply the needs of a far larger local population, and in which the European element is much more strongly represented.

Great Britain, mistress of Malta, with which Tripoli is in almost daily communication, enjoys more than one-half of the whole trade of the place; she supplies nearly all the cotton goods, here known as "Maltese," from the name of the neighbouring insular depôt, taking in exchange the great bulk of all the alfa grass of the country. The Italians, represented in the town by almost all the European immigrants, occupy the second position in the movement of exchanges. Till recently France ranked even after Turkey in the general trade and shipping; but since the seizure of the neighbouring province of Tunisia, her share in the traffic has considerably increased.

But the importance of Tripoli as a great emporium of trade must continue somewhat precarious until its harbour has been deepened and sheltered from dangerous winds. During the month of January especially the approaches are much dreaded, and at this season vessels are often driven ashore by the prevailing north-westerly gales. The natural barrier of reefs urgently requires to be raised some feet higher in order more effectually to break the force of the surf, while other reefs obstructing the entrance will have to be cleared away. The channel is only from 16 to 20 feet deep at low water, and very little over 20 at the flow; but vessels drawing more than 13 or 14 feet cannot venture to cross the bar without risk of grounding.

West of Tripoli the monotony of the Mediterranean seaboard is relieved by some pleasant districts, where a few permanent villages have been founded. But farther inland the naturally fertile and abundantly watered plains of Jefâra are inhabited almost exclusively by nomad communities. They might easily be changed, says Rohlfs, into a second Mitija, richer than that of Algiers. The coast route traverses *Zensur* and *Zauya*, chief town of the eastern division of Tripolitana, beyond which appear the ruins of the ancient *Sabratha* of the Phœnicians, that is, the "market," one of the three cities which took the collective

name of *Tripolis*. The decay and final extinction of this place dates probably from the eighth century of the new era. To the ruins of Sabratha and of the little hamlet resting under the old walls, the Italians have given the name of *Tripoli Vecchio*, or "Old Tripoli," a title unwarranted by history and without any Arabic equivalent.

Farther on lies the little port of *Zoarah*, whose palm-groves, like those of Tripoli, are threatened by the encroaching sands. Zoarah is the last town of Tripolitana in this direction. A neighbouring strip of sand, the *Ras-el-Makhbas*, has become famous for the vast salt beds it serves to protect. In the thirteenth century the Venetians obtained from the Emir of Tripoli the exclusive privilege of working the sebkha of the Ras-el-Makhbas, or Zoarah, and so important became this industry that the Republic appointed special magistrates to regulate its operations. Every year at a stated period a Venetian fleet cast anchor in the Bay of Ras-el-Makhbas, and shipped cargoes of salt for the whole of North Italy, Switzerland, Tyrol, and Dalmatia. But in the eighteenth century the Venetians were ousted by the Genoese as farmers of these salines.

South and south-west stretches the frontier zone, which was long a sort of borderland, given up to lawless and marauding tribes. After the recent occupation of Tunis by the French, about 75,000 Arabs of the southern tribes took refuge in this almost desert region, and being unable to procure any sustenance from the thankless soil, took to raiding in all the surrounding territories. At present most of these fugitives have returned to their native steppes, leaving the wilderness again in the possession of the Nuails and a few other nomad trib

## CHAPTER V.

### FEZZAN.

POLITICALLY Fezzan belongs to the Turkish province of Tripolitana; by its position to the south of the Jebel-es-Soda, as well as its climate, it forms part of the zone of the Sahara; by its prevailing Negro population it depends more even on the region of Sudan than on that of North Africa. At the same time, the relative large extent of its oases, and their easy access by the routes from Tripoli, constitute it an intermediate region between the seaboard and the Sahara. In former times the Roman occupation had attached this territory of "Phazania" to the Mediterranean world. They were succeeded by the Arabs, who arrived as conquerors during the first half century of the Hegira. Then came the Turks, heirs of Rome through Constantinople, whose authority was finally established early in the present century after a long series of wars, promoted not by a love of freedom on the part of the inhabitants, but by the rival ambitions of families aiming at the sovereign power.

At present the products of Europe are introduced to a large extent through Fezzan into the heart of the continent, and thus is gradually brought about the work of assimilation between its various races. But whatever importance it may possess as the commercial gateway to Central Africa, Fezzan counts for little in respect of population, which, according to Nachtigal's detailed statistical statement, amounts at most to forty-three thousand, and to thirty-seven thousand only if we exclude the inhabitants of the oases lying north of the watershed. Even accepting Rohlfs higher estimate of two hundred thousand for the whole region, the proportion would be considerably less than two persons to the square mile; for within its natural limits between the Black Mountains to the north, the spurs of the Jebel Ahaggar to the west, the advanced escarpments of Tibesti to the south, and the Libyan desert to the east, Fezzan has a superficial area of at least 120,000 square miles. But the administrative circumscription of Fezzan is far more extensive, as it includes, north of the Black Mountains, the oases of Zella and Jofra, and all the lands draining to the Mediterranean as far as Bu-Njeim.

During the last hundred years, Fezzan has been visited by many European travellers. In 1798, Hornemann, one of the missionaries sent by the African Exploration Society, traversed both the Black and the White Harûj by a track

which has been followed by no subsequent western explorer. Twenty years later Lyon surveyed the chief trade route connecting Tripoli through Jofra with Murzuk, and determined a few astronomical points, which were afterwards extended by the researches of Oudney, Denham, and Clapperton. The expedition of the year 1850, associated with the names of Barth, Overweg, and Richardson, followed the direct highway across the Red Hamada wilderness. Then came the important explorations of Vogel, Duveyrier, Beurmann, Rohlfs, Von Bary, and Nachtigal, who have not only laid down the network of their own itineraries, but have also supplemented them with many others, on the authority of numerous Arab informers. Thus, to mention one instance, Rohlfs has published an account of the discovery of one of the Wan oases by Mohammed-el-Tarhoni, an Arab of Zella.

In its general outlines, Fezzan presents the form of an amphitheatre gradually inclined towards the east, and on the other three sides encircled by plateaux. Its mean altitude is about 1,650 feet, the lowest levels of the oases nowhere probably falling below 650 feet. According to Barth, the deepest depression occurs at the Sharaba wells, east of Murzuk, where a lacustrine basin receives the drainage of an extensive area, and remains flooded for months together.

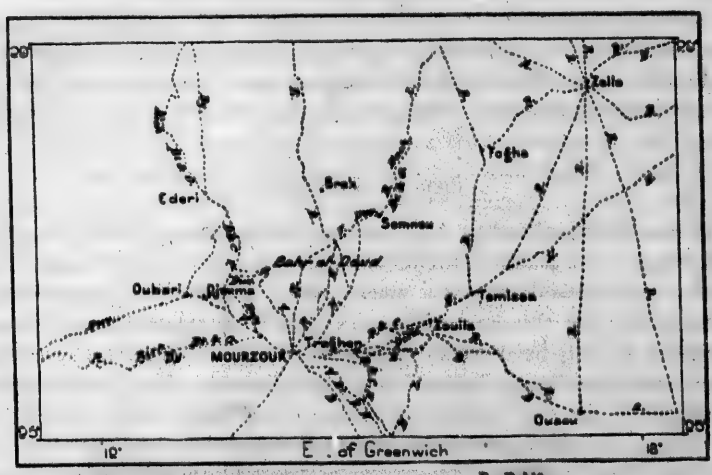
## Physical Features.

The vast region enclosed by the escarpments of the plateau is itself a somewhat broken country, the general relief of which, as well as its mean elevation, shows that it has not certainly formed a marine basin during recent geological times, notwithstanding the theories lately advanced to the contrary by some eminent geographers, not only for Fezzan, but for the whole of the Sahara. Nevertheless in many places traces are visible of the former presence of salt water, and the submergence of the land at some very remote period is attested both by the undulating lines of shifting sands driving before the winds on the western plateau, and by the polished pebbles of diverse colours strewn like mosaics over the surface of the eastern serirs. The space encircled by the surrounding plateau consists in great part of secondary terraces, whose main axis runs in the direction from west to east, and which are separated from each other by crevasses with a mean depth of about 150 feet. These narrow, tortuous intermediate depressions take the name of "wadies," like the beds of temporary watercourses in the northern parts of Tripolitana, but as they are never flushed by any freshets, a more appropriate designation would be that of *Lofra* or "*ditch*," which in fact is applied to one of these depressions in the Murzuk district. Some are mere ravines of sand or hard clay, while others present the aspect of verdant glens shaded by overhanging palm-trees. Although not forming a fluvial system properly so called, they generally converge one towards another, without, however, always reaching the common bed towards the east of Fezzan. In this direction the unfinished channels are obstructed by sands and reefs.

The southern slopes of the Jebel-es-Soda and of the Black Harûj present a very gradual incline. They are prolonged southwards by the spurs and terraces of

the Ben-Afien serir, plateaux of slight elevation strewn with stones and shingle, which greatly impede the progress of the wayfarer. South of the crest of the Jebel-es-Soda a space of about 80 miles has to be traversed before reaching the escarpment at the foot of which begins Fezzan properly so called. In this almost absolutely desert district the stony surface is broken only by a single green depression, that of the Fogha oasis. The base of the Red Harûj is abruptly limited by the Wady Heran, the first occurring in Fezzan proper. A few trees are here occasionally met in the moist depressions near the wells; but throughout nearly its whole course the wady presents little to the traveller's wearied gaze beyond shifting sands interspersed with sandstone blocks blackened by the heat. Never-

Fig. 19.—Routes of the Chief Explorers in Fezzan.
Scale 1: 700,000.




theless, the aspect of the valley changes at its confluence with a broader wady skirted on the north by the escarpments of the spurs of the Black Mountains. The bed of this Wady-esh-Shiati, as it is called, is covered with a layer of humus, through which the roots of the palm-trees penetrate to a mean depth of 10 feet before striking the moist sands underneath. According to the measurements taken by different explorers, the altitude of the wady varies from 1,150 to 1,650 feet, but from these data no idea can be formed of the real slope of the valley, which may possibly be even more elevated towards the centre than at either extremity.

South of the Wady-esh-Shiati, which is lost eastwards amid the cliffs of the White Harûj, the ground merges in a terrace which in some places has a breadth

of about 60 miles; but its surface is broken here and there by small verdant depressions, mostly inhabited, and by some narrow wadies. Amongst these is the Wady Zelaf, a remarkable fissure in the ground overgrown with a forest of palms, whose delicious fruit is the common property of all wayfarers. Custom, however, forbids them to carry away any supplies, and what is not consumed on the spot by passing caravans is gathered by the inhabitants of the Esh-Shiati.

The western part of the plateau intersected by the wooded Zelaf watercourse is occupied by the so-called *edeyen*, that is, in the Temâhaq dialect of the eastern Tuaregs, "sandhills." According to M. Duveyrier, who traversed it at two points, this sea of sands stretches for a distance of 480 miles in the direction from west to east, with a mean breadth of 50 miles. Towards the part of the plateau crossed by the main caravan route between Tripoli and Murzuk, the hitherto uninterrupted sandy surface becomes decomposed into a number of low eminences and distinct archipelagoes of sandhills, which are nowhere disposed in regular ranges, but rise in some places in completely isolated heights. North of Jerma, Barth's caravan found the winding lines of dunes so difficult to cross, that the men were obliged to level the crests with their hands before the camels could gain a footing. But the sandhills attain a still greater elevation farther west, where by trigonometrical measurement Vogel found one eminence rising 540 feet above a small lake occupying a depression in the plateau.

## Lakes and Wadies.

The explorer is often surprised to meet in this almost rainless region permanent or intermittent lakes in the midst of the dunes. In a single group north of the Murzuk hamâda there are as many as ten, nearly all, however, of difficult access, owing to the hillocks of fine sand encircling them, in which the foot sinks at every step. Two of these basins contain chloride of sodium and carbonate of soda, like the natron lakes of the Egyptian desert; hence the designation of Bahr-el-Trunia, or "Sea of Natron," applied to one of the Fezzan lakes. Several other lacustrine basins are inhabited by a peculiar species of worm, highly appreciated by the epicures of the district. The lake yielding the most abundant supplies of this delicacy is specially known as the Bahr-el-Dud, or "Sea of Worms," and the local fishermen take the name of duwâda, or "worm-grubbers." This sheet of water, fringed by palms and almost circular in form, has a circumference of about 600 miles, with a depth in the lowest part, measured by Vogel, of 26 feet. But owing to the almost viscous consistency of the excessively saline water, it appears far deeper to the natives, who regard it as fathomless. Invalids from all parts of Fezzan frequent it in crowds, first bathing in this basin, and then plunging in some neighbouring freshwater pool, in which is dissolved the incrustation of salt covering their bodies.

The worm, known to naturalists by the name of *artemia Oudneyi*, is the larva of a diptera, whose serpentine body, one-third of an inch long, and of a gold-red colour like that of the cyprinus of China, flits about like a flash of fire, with surpris-

ing velocity amid the animalculæ swarming on the surface of the lake. By means of fine nets the larva is captured, together with other larvæ which prey on it, and the fucus on which it feeds. The whole is then kneaded into a sort of paste, which has a flavour resembling that of shrimps "a little gamy." The mess is mostly used as a sauce or relish with other aliments.

The plateau of dunes is abruptly terminated southwards by the depression of the Wady Lajâl, which runs mainly in the direction from west-south-west to east-north-east for a total distance of nearly 300 miles between the deserts separating Rhât from Fezzan, and those stretching towards the White Harûj. But the depressions in this wady are occupied by oases for a space of not more than 120 miles altogether, with a mean breadth of about 5 miles.

Towards its source in the west, the Wady Lajâl has an elevation of 2,000 feet above sea-level, falling to 1,350 at the point where it merges in the eastern deserts. The most striking contrast is presented by the opposite banks of the wady, those on the north side consisting of gently rounded sandy heights, while on the south rise abrupt cliffs, a continuation of the partly Devonian Amsak range, which commands the entrance of the valley. Near the centre two corresponding sandy and rocky headlands projecting towards each other divide the depression into two sections, respectively known from their geographical position as the Wady-el-Gharbi and Wady-esh-Sherki. The latter, or "eastern" wady, which is the largest, is connected eastwards with the palm-groves of Sebha, beyond which it is interrupted by the desert, reappearing again in the small oases of Temenhint, Semnu, and Zighen. The position of these oases seems to indicate the existence of a former tributary between the Wadies Lajâl and Esh-Shiati; but the whole valley is now obstructed by sands.

Like that of other depressions in Fezzan, the soil of the Wady Lajâl is formed of *heisha*—that is, a very light humus saturated with salt and swollen by the combined action of heat and the [illegible] ground waters. Saline efflorescences in many places develop a central zone skirted on either side by cultivated tracts at the foot of the cliffs and sandhills. In the Wady Lajâl the mean depth of the water is about 12 feet; hence it is unnecessary to irrigate the palms, which derive sufficient moisture through their roots. But the water required for the cereals and vegetables is obtained from the wells, into which is plunged an apparatus made of date-wood, looking at a distance like shears for masting of ships, or the cranes mounted on the wharves of seaport towns. Notwithstanding the statement of Rohlfs to the contrary, there appear to exist in Fezzan the so-called *fogarats*, or systems of irrigation wells, one of which was visited by M. Duveyrier on the slope of the southern cliffs of the wady, not far from Jerma.

The Murzuk hamâda, which separates the Wady Lajâl from the depression specially known as the *Hofra*, or "Ditch," forms an extensive plateau almost uniformly level, except on its northern verge, partly skirted by the abrupt Amsak range, and at a few other points furrowed by crevasses either occupied by oases or at least containing artificial wells. Such is the Godva oasis, traversed by most of the caravans between Murzuk and Tripolitana. Narrowing towards its western

extremity to a space of not more than a day's march in breadth, the Murzuk hamâda broadens out eastwards, gradually merging in the stony serirs and the unexplored deserts skirted on the north by the limestone terraces of the White Harûj. In its western section it is limited southwards by the narrow Wady Aberjush, beyond which recommence the stony plateaux. These desolate wastes, which are continued indefinitely southwards in the direction of the Tibbu territory, are destitute of any vegetation beyond a few straggling gum-trees in their depressions. But towards the east is developed the vast semicircular basin of the Hofra, the great central cavity in which is situated Murzuk, present capital of Fezzan. This low-lying region is divided by waste and stony tracts into two clearly defined sections: to the west the Murzuk oasis, to the east that of Esh-Sherkiya, or "the

Fig. 20.—Oases of Fezzan.

Scale 1 : 7,000,000.

The towns and villages are surrounded by oases.

110 Miles.

Eastern." The latter consists in reality of a long narrow chain of oases subdivided into numerous secondary depressions, which are separated from each other by sandy ridges, without presenting anywhere any regular slope.

## Oases of Fezzan.

The various oases vary in altitude from 1,000 to 1,650 feet, and Temissa, the last in the direction of the east, is everywhere surrounded by solitudes. The bed of the Hofra, like that of the other depressions in Fezzan, consists of *hesha*; here, however, containing rather more argillaceous soil than elsewhere. But this clay is saturated with salt to such an extent that the unbaked earthen bricks of the houses are dissolved during the heavy rains. The water drawn from the deep wells is

also so brackish that strangers find it very unpalatable. In several places it rises to the surface, spreading out in sebkhas or swamps, which are usually fringed by a crystalline zone of salt.

The Hofra, with its eastern prolongation, the Sherkiya, lies south of the last great oasis in Fezzan. Along the route towards the plateau, 2,500 feet high, which separates this region from the Tibbu domain, caravans meet nothing but a few wells and the two small oases of Gatroûn and Tejerri. Eastwards, in the direction of Kufra, the desert is even more dreary than towards the south. Serirs, dunes, saline depressions follow in succession for a space of over 120 miles before the traveller reaches a first oasis, that of Wau-el-Kebir, or, "the Great Wau," which was unknown to geographers before the journey of Beurmann in 1862. It was occupied by a Negroid Tibbu population down to the year 1841, when they were driven out by marauding Arab tribes, who made it the centre of their raiding expeditions.

The Tibbus attempted in vain to recover this oasis, although the conquering tribe was expelled in its turn, and at the time of Beurmann's visit Wau was held by members of the Senûsiya brotherhood, who, being all celibates, allowed no women to reside in the place. Beurmann was informed that at a distance of three days' march westwards there was another oasis, known by the name of Wau-es-Serir, "the little Wau," or Wau-Namus, "Mosquito Wau;" but no one in the district was able to show him the route to follow, the only person acquainted with the oasis having recently died at an advanced age.

This lost depression is the same that was rediscovered in the year 1876 by the Arab Mohammed Tarhoni, aided by a few voluntary explorers from Zella. Unlike Great Wau, it is uninhabited, although numerous potherbs and palm groves cleared of their undergrowth show that until recently it supported a small population, probably of Tibbu stock. Besides date-palms, its flora comprises acacias and tamarisks, as well as shrubs of smaller growth. In the rocks is found a deposit of "fine yellow sulphur," while a small lake in the centre of the oases accounts for the swarms of winged insects, whence it takes its name. The former inhabitants had settled on "a very high mountain" above the lake and the clouds of mosquitoes.

According to local tradition, there exists to the south-east another oasis, the Wau-Harir, a valley clothed with a rich vegetation, and inhabited by a large number of animals, such as moufflons, gazelles, and antelopes, which have not yet learnt to fear man, and allow themselves to be attacked and speared. Camels which have lapsed into the wild state are also said to herd beneath the shade of the palms along the banks of the streamlets watering this mysterious oasis.

### Climate of Fezzan.

Lying under a more southern latitude than Tripolitana, properly so called, Fezzan has naturally a higher temperature, ranging from 81° to 83° F. Nevertheless the cold is more intense, both on account of its greater distance from the sea, which always exercises a moderating influence on climates, and also in consequence of the greater purity of the atmosphere causing at night a free

radiation of heat into space. Still the sky is seldom perfectly cloudless, the lovely azure of temperate zones being here replaced by milky white tints and the striated cirri of the upper atmospheric regions. In December, and during the first half of January, the thermometer at sunrise seldom rises above 42° or 43° F., and in many parts of the plateau water often freezes at night. Snow is even said to have been observed on the mountains encircling the country.

On the other hand, the excessive heat is almost intolerable for strangers. If, according to Lyon, the summer average is already 90° F. at Murzuk, Duveyrier here twice recorded in July a temperature of 110° F. in the shade, while in the desert, properly so called, the glass often rises to over 121° F. In the sun it exceeds 170° and even 187° F. Altogether Fezzan belongs to the climatic zone of the Sahara, in which the extremes of temperature suffice, in the language of Herodotus, to consume the very heart of the country. Where are the rocks capable of resisting the expansions and contractions caused by extremes of heat and cold, whose mean annual discrepancy amounts to 198°, and possibly even 208° F.?

The rainfall also is all the lighter in Fezzan, that the moisture-bearing clouds from the north are arrested by the Jebel-es-Soda and Black Harûj ranges. There is even a complete absence of dew, owing to the dryness of the air. Yet, strange to say, the inhabitants of the country do not themselves desire rainy weather, not only because it washes away their earthern cabins, but also on account of its injurious effects on the palm-trees, by interfering with the normal system of irrigation from the subterranean supplies. "Rain water is death, underground water is quickening," says the native proverb. Heavy showers fall usually in winter and spring, that is, from December to April, when the northern winds contend for the supremacy with those from the south.

## Flora of Fezzan.

The great extremes of heat and cold have as their natural accompaniment a correspondingly impoverished flora. Plants unable to adapt themselves to the severe colds and intense heats, all alike perish in this climate. Even in the sheltered depressions of the desert there are scarcely any spontaneous growths, beyond a few talha acacias of scanty foliage, pale tamarisks, the thorny alhagi, on which the camel browses, the sandy colocynth, alfa grass, some scrub, a species of salsola, and two or three herbs. The cultivated are perhaps more numerous than the wild species, although in many of the gardens of the oases there is a great lack of variety. In some of the wadies are grown wheat, barley, and several other kinds of cereals, the gombo, whose pulpy fruit is highly appreciated by the Arabs, some thirty species of vegetables enumerated by Nachtigal, amongst which are comprised nearly all those growing in European gardens. The fig and almond yield excellent fruit, but most of the other fruit-trees of the temperate zone are rare, or represented only by a few stunted specimens.

The olive reaches no farther south than the Wady Otba, to the west of Murzuk. Tobacco, cotton, and indigo flourish in the gardens of Fezzan, but the supply is

very limited. The gum-tree, especially in the Wady Lajal round about the Ubari oasis, yields an excellent gum, by no means despised by the Targui when there is a dearth of other aliments. But of still more importance in the economy of the country are the plants yielding fodder, such as luzerne, clover, and several varieties of melilotus (sweet clover).

In Fezzan the date finds a thoroughly congenial home. According to the natives, it thrives best in the Hofra district, and especially in the oasis in the centre of which lies the town of Traghen. Nowhere else is it found growing in greater profusion, or with such dense masses of foliage. No less than three hundred varieties are reckoned in the whole country, of which over thirty occur in the single oasis of Murzuk. Forests springing spontaneously from the scattered date-stones are so numerous that their produce is left to the gazelles. In the oases the cultivated palms are crowded together in prodigious quantities, in that of Murzuk alone no less than a million being claimed by the Turkish Government, which also possesses large numbers in other plantations. In a country so destitute of other plants, it is impossible to overrate the economic importance of this marvellous plant, whose fruit, stem, branches, sprouts, fibre, sap, are all turned to account.

Dates and cereals form the staple food of the settled communities, while for the nomads the date, with camel's milk, yields an all-satisfying and perfect nourishment. The domestic animals, including even the dogs, also consume this fruit, either as their chief food, or in the absence of their more customary aliment. It has been noticed that nearly all the inhabitants of Fezzan suffer from decayed teeth, the cause affecting them being attributed to the too exclusive use of the date, which, although greatly superior to that of the Tripolitan seaboard, is still inferior to the Egyptian and Algerian varieties.

### Fauna of Fezzan.

The absence of pasturage prevents the native populations from occupying themselves with stock-breeding in a large way. The domestic animals are of extremely small size, and relatively no more numerous than wild animals, which find but a scanty supply of herbs and water. The "lion of the desert" does not prowl over the solitudes of Fezzan, where the wayfarer meets neither the panther nor the hyæna. Not even the jackal's nightly howl is heard round the villages and camping-grounds, which are infested only by the long-eared fennec fox. Gazelles and antelopes, described by Lyon under the name of "buffaloes," must be very rare, this game being nowhere exposed for sale in the market-places.

A few vultures, wall falcons and ravens, swallows and sparrows, everywhere the constant associates of man, are almost the only birds seen in Fezzan, except during the summer months, when doves and wild duck arrive in large flocks from more southern regions where they have passed the winter.

In the courts and farmyards are seen neither poultry nor pigeons. Goats and sheep degenerate, and nearly all those bred in the country are characterised by long bony frames, stiff tail, small head, and fine coats. The horned cattle,

introduced from the north, are all of small size, and resist the climate badly. Horses are found only in the stables of chiefs and grandees, and scarcely fifty are said to exist in the whole country.

The only quadruped extensively employed in the service of man is the camel, which is of the Arab species, differing little from the variety common in the Tuareg territory. The largest and finest breeds are found in the Black Mountains and the Harûj district. Here they are clothed in winter with a dense coating of hair, which is shorn once a year, and employed for weaving carpets and tent-cloths. According to most authorities, the camel was not introduced from Egypt into the more westerly regions of Libya before the first century of the vulgar era, before which time the Garamantes made use of oxen, of horses, and wheeled carts in their journeys across the dunes and serirs. This circumstance indicates a great change of climate during the last two thousand years, for at the present time it would be impossible to traverse these solitudes without the aid of the camel. The rock carvings still seen at Telissarhé, in the south-western part of Fezzan, represent with great accuracy herds of cattle on their way to the watering-places. On these rocks have also been recognised sketches figuring a horse and an ass.

## Inhabitants of Fezzan.

The inhabitants of Fezzan belong to all the races of North Africa, constituting an essentially mixed population, in which the primitive elements appear to be the fair Berbers and the dark Ethiopians, the oldest occupants of the land. In more recent times the Arabs, especially the Aulad Slimân family from Egypt and Cyrenaica, have also largely contributed to renew or modify the local population. Formerly, when the Barbary corsairs still scoured the Mediterranean waters, a number of Italian captives were regularly introduced into the harems of the Murzuk sheikhs, thus supplying an additional ethnical element possessing a certain relative importance in a region so sparsely peopled.

Amongst the natives of Fezzan is seen every shade of colour, from a deep black to an almost fair complexion. Rohlfs even tells us it frequently happens that, by a phenomenon of which the inhabitants of Spanish America offer many examples, individual members of the family have spotted skins—white on a black, or black on a white ground. The blacks of Fezzan are also often seen with long, sleek hair, while that of the whites is on the contrary short and woolly. On the whole the predominant colour may be said to be that of the yellow Malays, although the hair and features are those rather of the Negro stock.

Besides that of the Tuareg Berbers, several languages are current amongst these mixed communities. The most prevalent is Kanuri, the speech of the kingdom of Bornu; and several local names of villages, wells, and other places attest a long residence in Fezzan of the Bornu Negroes, descendants probably of the Garamantes. All the adult men understand Arabic, the language of commerce; and the dialects of Haussa, and other parts of North Africa, are also heard in the cabins of the Fezzan Negroes.

The Tuaregs of this region, a smaller and feebler race than those of the Jebel Ahaggar, in the south of Algeria, roam for the most part in the south-eastern districts between Murzuk and Rhât. These belong to the Tizilkum group, free men, who despise the Arab, base "payer of tribute." They are members of the brotherhood of Mohammed-el-Madani, whose mother-house is at Misrata, and they generally speak Arabic. According to Richardson, they number altogether about a thousand.

Slavery, which has so largely contributed to crowd the original population of the country, has scarcely diminished, notwithstanding the formal edicts against the traffic issued in Fezzan by order of the Osmanli authorities. The exportation has doubtless fallen off; but the slaves, no longer forwarded to the seaports of Tripolitana, or through the Aujila and Siwah oases to Egypt, tend only to increase the local enslaved class. According to Nachtigal, from five to eight thousand slaves passed every year through Fezzan towards the middle of the present century; but in 1870 the gangs had been reduced to about one-third of that number.

The blacks who remain in the country have seldom occasion to regret their lot. Here they are absolutely regarded as members of the family into which they have entered, and those amongst them who return to their native homes usually do so not as fugitives, but as commercial agents in the interest of their late masters. The Fezzanese are altogether of a remarkably mild disposition; but morality is at a very low ebb, and many children perish abandoned on the threshold of the mosques and convents. Whoever chooses to pick up one of these foundlings becomes its adopted father, and never fails to treat it as one of his own children.

The traffic in slaves has hitherto been replaced by no other more legitimate trade. The only important article of export is soda from the "Natron lakes," a few tons of which are yearly sold in the Tripoli market. The time has gone by when gold dust, ivory, and ostrich feathers contributed, with slaves, to enrich the Fezzan traders; who, however, were never able to compete successfully with their commercial rivals of Ghadames, Jofra, and Aujila. Although the produce forwarded from Sudan to the coast passes through their territory, they derive little profit from this transit trade. Even in Murzuk itself the chief merchants are the Mojabras of the Jalo oasis.

The vast distances required to be traversed between the scattered oases oblige the Fezzanese to rely mainly on their local resources. The regular commercial relations established in Mauritania between the inhabitants of the Tell and those of the oases, the former exchanging their cereals for the wool and dates of the latter, scarcely exist between the tribes of the Tripolitan oases and the people of Fezzan. Nevertheless a few palm groves in the Wady Shiati, south of the Black Mountains, belong to the Arabs of Tripoli, who yearly cross the hills and plateaux to collect their crop of dates. In general the land is distributed in fair proportion amongst the inhabitants, each of whom has his plot of ground and palm-grove; but they are weighed down with heavy taxes. Being unable to breed live-stock owing to the dryness of the climate, and the industries being scarcely sufficient for the local wants, they have no means of procuring any supplies from abroad.

Since the middle of the century they have even grown poorer, the more vigorous young men having emigrated to Sudan to escape military service. According to Richardson, the men are considerably less numerous than the women in Fezzan, scarcely exceeding 11,000 in a total estimated by him at no more than 26,000 adults. In certain villages visited by Duveyrier the able-bodied men had been reduced to about 12 per cent., foreign rule having here also depopulated the country and caused a relapse into barbarism.

## Topography.

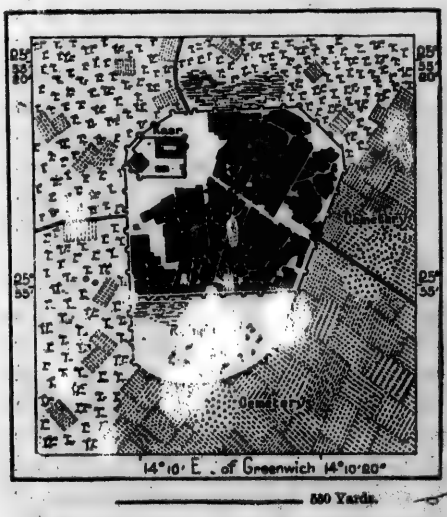
In the Wady Shiati, the most important oasis of North Fezzan, there are two places ranking as towns: in the east *Brak*, residence of the mudir or governor, in the west *Ederi*, standing on an eminence and surrounded by fortifications. *Jedid*, that is, the "New," in the more southerly oasis of Sebha, despite its name, is at least three hundred years old. It is also enclosed by walls, and has a population of about a thousand souls. Like the neighbouring town of *Karda*, it was formerly peopled by a branch of the Au[illegible]limân Arabs, who, however, were driven out by the Turks and dispersed throughout the surrounding countries, even as far as Wadai. To the north-east follow the three towns of *Temenhint*, *Semnu*, and *Zighen*, in the oasis of like name—the last mentioned, a mere collection of hovels grouped round a central castle, and exclusively inhabited by Marabuts from the Fogha oasis.

In the Wady Lajâl, south-west of Jedid, the largest places are *Tekertiba*, *Ugraëfeh*, and *Ubari*. Towards the western extremity of the valley lies the little village of *New Jerma*, near the ruins of *Garama*, which 2,500 years ago was the capital of the powerful nation of the Garamantes, who held sway throughout the Libyan oases as far as the region now known as Marocco. Of *Jerma Kadim*, or "Old Jerma," there still remain the enclosures, 2½ miles in circumference and flanked by broad earthen towers. Not far from the palm groves of Jerma stands a well-preserved monument, noteworthy as being the most advanced Roman structure in the interior of the continent. To this point during the reign of Augustus had penetrated Cornelius Balbus Gaditanus, conqueror of Garama and Cydamus, or Ghadames. Hence the special historic interest attaching to this square tomb, which is in the form of an altar, decorated at its four angles with Corinthian pilasters.

*Murzuk*, present capital of Fezzan, has the advantage of being situated in the centre of the country. Nevertheless, it seems strange that its rulers should have selected such a malarious place for their residence. In the hot season nearly all strangers, even the Negroes, are attacked by ague; and till recently the whites were allowed to reside in the town only during the three winter months, not through any solicitude for their health, but from the prevalent idea that their bodies fomented and rendered more fatal the miasmatic exhalations. In the cemetery to the east of the town is shown the tomb of the traveller Ritchie. But the choice made of Murzuk, which lies on the track of the caravans traversing the southern plateaux in the direction of Sudan, has helped to make it the most populous city in Fezzan, the number of its inhabitants being estimated by Nachtigal at six thou-

sand five hundred, and by Rohlfs even at a still higher figure. Standing at an altitude variously estimated at from 1,520 to 1,600 feet, Murzuk covers an area of over a square mile, within an earthen wall, strengthened by bastions and flanked by towers. Round the enclosure stretches a zone of sand, and salt marshes, beyond which are the gardens and scattered palm groves. The streets within the walls, mostly at right angles, are intersected by a broad *lendal*, or boulevard, running from north-west to south-east, and dividing the town into halves. At its north-west end stands the citadel, a massive gloomy building over 80 feet high, and in the middle of the town regular porticoes give access to the bazaar, where are heard all the languages in North Africa. The mean annual value of the exchanges in this mart is estimated at £20,000.

Fig. 21.—Murzuk.
Scale 1 : 17,000.




On the route to Rhât, west of the capital, the oasis of *Otba* or *Tessawa*, an ancient settlement of Negroes from Haussa, is the only district containing any groups of population. Beyond this point nothing is met except a few wells, such as that of *Sharaba*, near which Miss Tinné, the "King's daughter," as she was called by the natives, was assassinated in 1869. In the Hofra district east of Murzuk lies the decayed town of *Traghen*, in the oasis of like name. For centuries this place was the capital of Fezzan, and residence of a Negro dynasty, whose sepulchral mounds are still shown near the town. But as the population decreased, the magnificent palm groves of Traghen developed into a vast forest, the produce of which is now little used except for the fabrication of *lakbi*, and a liquor prepared from the fermented juice of the sap. The most copious spring in all Fezzan wells up near the crumbling walls of Traghen; but this source of Ganderma became obstructed during a civil war, and now oozes into a marshy depression.

*Zuila* and *Temissa*, the former occupied by Shorfa, or reputed descendants of Mohammed, the latter by Berbers who still speak the national idiom, are both situated in the "Eastern" oasis. Like Traghen, Zuila was also at one time capital of Fezzan, and the whole region is still known to the Tibbus by this name. In another oasis near the southern frontier lies the "holy" city of *Gatron*, held by learned Marabuts, who monopolise the trade with the Tibesti uplands, and who claim to have come from Marocco three or four centuries ago. But their mixed descent is sufficiently betrayed by their Negroid features, and even now they seek their wives

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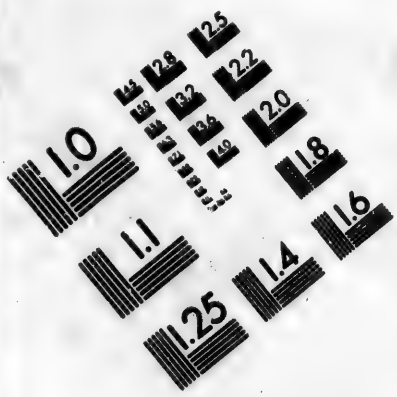


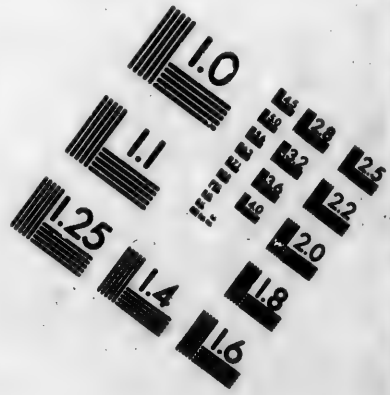


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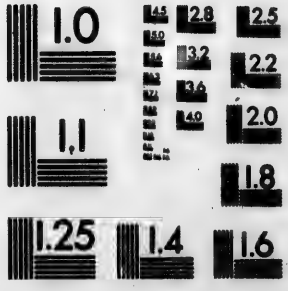


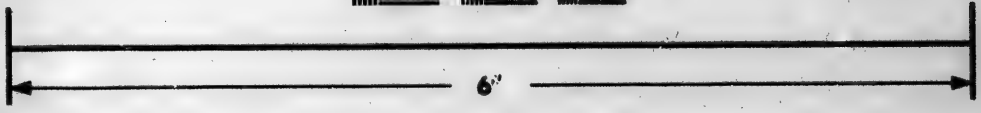


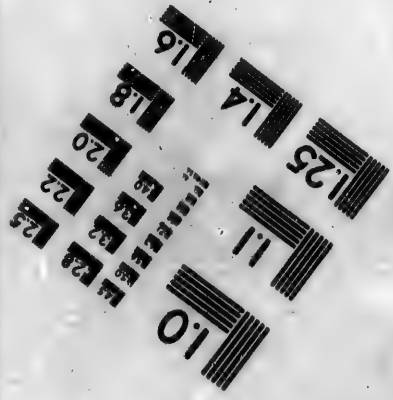


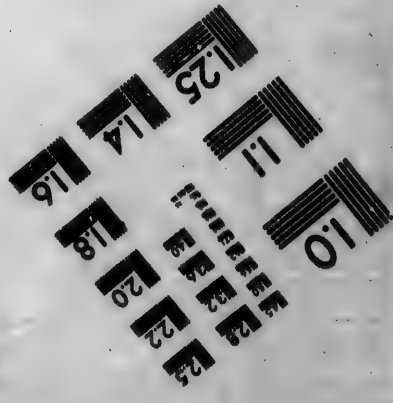


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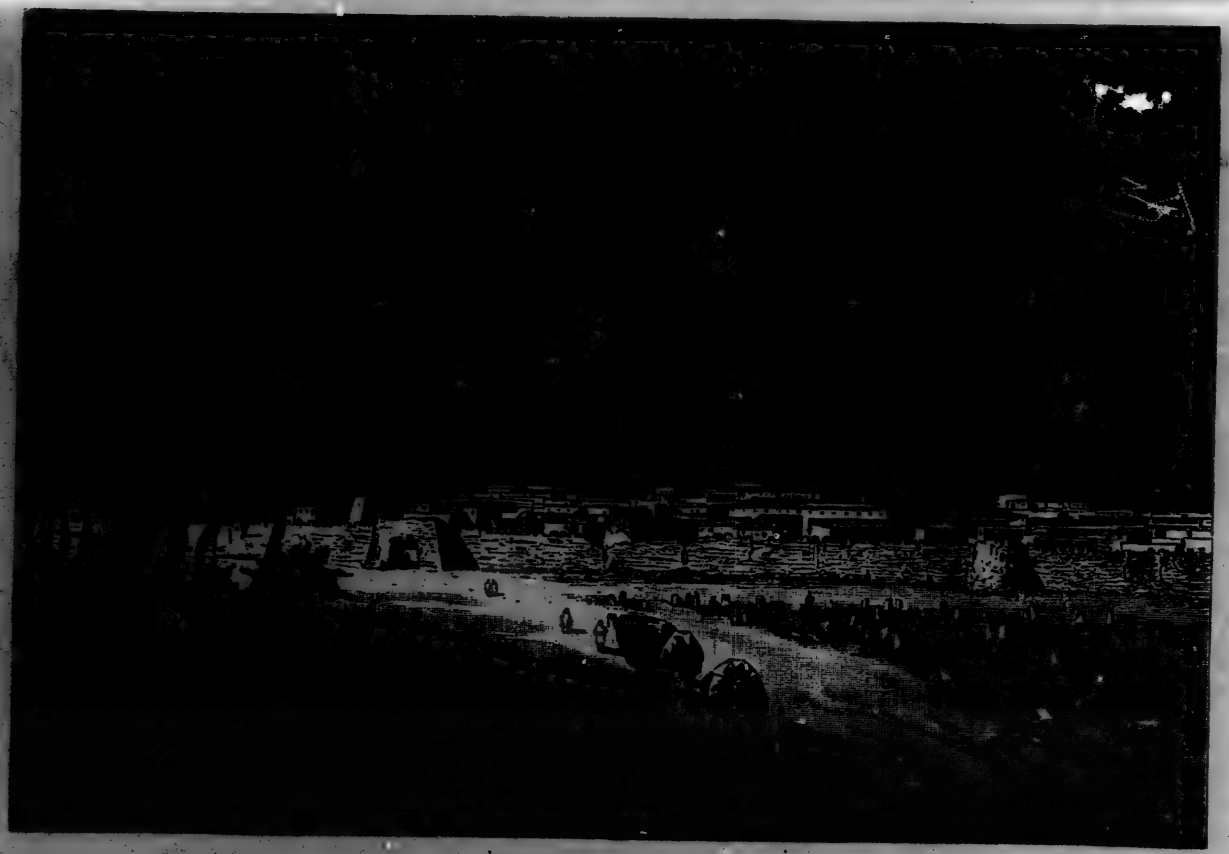


GENERAL VIEW OF MUSEUM.

chiefly among the natives of Tibesti. Gatron lies in a *hattiya*, or swampy depression, surrounded on all sides by dunes and cliffs. Its vast palm forest is said to yield the best dates in Fezzan, and the baskets made by the native women are exported to all the surrounding districts.

Gatron lies at the northern extremity of a chain of oases which stretches as far as *Tejerri*, the last inhabited place in Fezzan, on the verge of the desert. Here also are seen the last date-palms, and the first dum-palms in the direction of the Sahara. Rohlfs was unable to determine the slope of the wady, which is perhaps nothing more than a depression in an old lacustrine basin.

South of Tejerri, where the Negro element already greatly exceeds that of the Fezzanese people, nothing farther is met on the caravan route to Sudan except the *Bir Meshru'* well, which has been frequently choked by the sand. Round it are shown the skeletons of men and animals still clothed with their sun-dried flesh. Groaning under the lash, worn out by the march across the arid plateaux, burnt by the torrid and dusty atmosphere of the desert, the gangs of slaves trail their chains with difficulty to the brink of the well. Here they often fall prostrate for the last time, and are left by the caravans to perish of hunger in the scorching rays of the sun.

## CHAPTER VI.

### GHADAMES.

ALTHOUGH included within the political and administrative frontiers of the Turkish possessions, the group of oases of which Ghadames is the centre forms a distinct geographical region, differing in its ethnology, history, usages and commercial relations from Tripolitana properly so called. While the latter forms part of the Mediterranean seaboard, the Ghadames district lies within the area of drainage of the desert, in a basin whose waters never reach the great inland sea. The intermittent stream which rises north-west of the Red Hamâda, and which under diverse names reaches the Ghadames oasis, after a course of about 150 miles, has no longer any perceptible channel in the region of dunes stretching beyond that point to the Igharghar basin. The other parallel wadies descending farther north from the southern gorges of the Jebel Nefusa also run dry in the same zone of sands, leaving nothing to indicate their course at a period when they were still running waters. It is probable, however, that all converged in a vast fluvial basin, tributary of the great southern sebkhas of Tunisia.

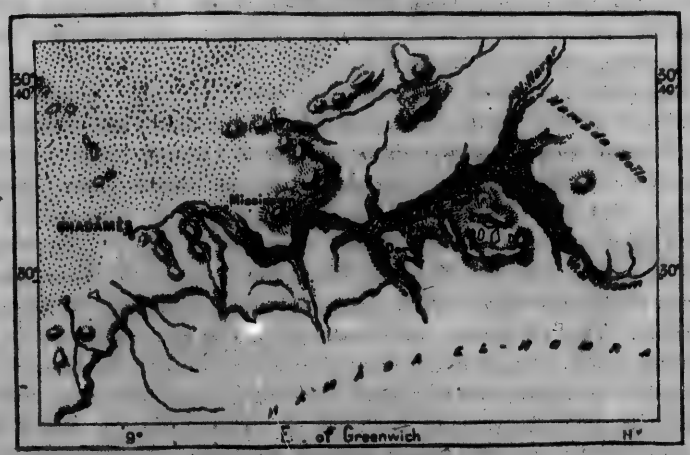
In this region of the Sahara slope, Ghadames is far from being the only, or even the most important oasis, as regards either the abundance of its waters, or the extent of its palm groves. But its special importance is due neither to its agricultural resources nor to the local industries, but to the commercial enterprise of its inhabitants, who have long been the chief agents in furthering the exchanges between the Mediterranean seaports and the markets of Sudan. From time immemorial Ghadames, the Cydamus of the Romans, has been the starting-point for caravans traversing the sea of sands in the direction of Lake Tsad and the river Niger. This commercial pre-eminence of a small oasis endowed with no exceptional advantages, must be attributed to its position precisely at the converging point of the Gabes and Tripoli route, on the very verge of the desert, between two inhospitable and almost inaccessible regions—to the west the shifting sands, to the east the rocky terraces of the Red Hamada. The advanced station, forming a sort of pass penetrating far into the desert, has become the necessary head-quarters of caravans bound for the Tuareg territory, the Twât and Wed-Draa oases. Thanks to the intermediate station of Rhât on the route to Sudan, it has also been able to compete with Sokna and the towns of Fezzan for the trade with Central Africa.

Since the French conquest of Algeria, most of the trans-Saharian traffic, in order to avoid the territory of the Rumi, has been deflected from its natural channel to the Ghadames route, lying scarcely 15 miles from the conventional frontier between the French and Turkish possessions. Further political changes, and especially the development of the railway system, must necessarily involve a still greater displacement of the old commercial highways.

Ghadames lies only 300 miles from Tripoli, and to the nearest point on the coast towards the common frontier of Tripolitana and Tunisia the distance scarcely exceeds 240 miles, a journey for an ordinary caravan of ten or twelve days. Throughout nearly the whole of its extent, this much-frequented trade route is moreover easily traversed, and little exposed to the raids of the Urghamma

Fig. 32.—Ghadames District.

Scale 1 : 2,450,000




marauders on the Tunisian border. Hence Ghadames has been frequently visited by European explorers since the time of Laing, who first reached this place in 1826. Richardson, Dickson, and Bonnemain followed each other towards the middle of the century; Duveyrier resided here in 1860, and two years later a French mission under Mircher studied its geographical features and commercial relations. During his journey to Central Sudan in 1865, Rohlfs made a detour to visit Ghadames, and since then Largeau and several other French explorers have traversed the neighbouring frontier to survey the oasis, which the French annexation of Tunis has brought into still closer relation with the European world.

## Physical Features.

The sandy plain of gypsum where Ghadames stands at an altitude of 1,170 feet according to Duveyrier, or of 1,300 according to Vatonne, would present a most

forbidding aspect, but for the green fringe of palms partly concealing the town, and pleasantly contrasting with the surrounding yellow plain, furrowed here and there with grey or reddish stripe. The powdery soil, in which the camel sinks at every step, is strewn with blocks of sulphate of lime, occasionally forming polyhedric groups, which are interspersed with gypsum and quartzose sand in nearly equal proportions. In the midst of the plain stand the so-called *gurs* or *kefs*, isolated eminences 130 to 160 feet high, and terminating in a table of white chalk, the remains of an upper layer which formerly covered the whole district, but which has been gradually eroded by the ceaseless action of outward and subterranean physical agents. It is easy to detect the work of destruction still going on. The superimposed strata of sandstone, carbonate of lime, gypsum, marl, or clay, resist in different degrees the influence of heat and cold, which oscillate between such great extremes in these solitudes; hence follow irregular movements of expansion and contraction, producing faults in the strata. Water also infiltrating through the porous soil expands and disintegrates certain rocks, the upward pressure causing fractures in the surface layers.

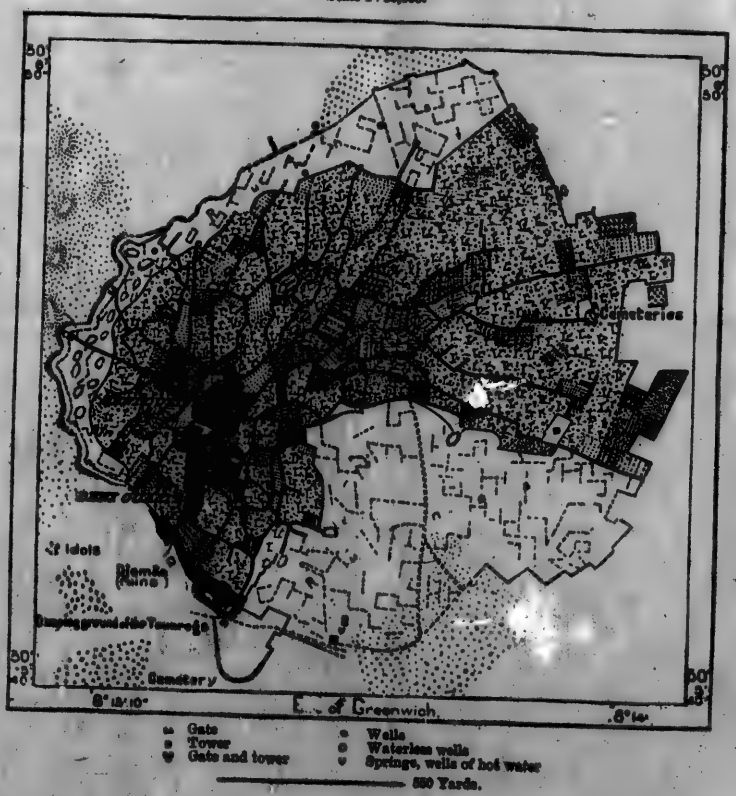
Throughout the whole of the Ghadames plateau this action is evident. The ground is covered with small cones upheaved by the thrust of underlying formations; between these irregular eminences rising in fantastic disorder above the normal level are still visible the uniformly superimposed strata; the rocks present the most varied aspects, from the solid and compact strata to one of the most complete disintegration. Certain hills still preserving their upper table have been fissured on one side, like burst flour-bags discharging through the rent a stream of sand from the inner rocks, which have been gradually triturated by the alternating temperature. Thus the plateau, at first cut up into isolated eminences, is being transformed into a system of dunes, some of which remain for ages disposed round a more solid central core, whilst in others the rock becomes completely ground to dust, drifting under the action of the winds and merging in the lines of dunes, whose long undulations cover certain parts of the desert. The rocks which best resist these weathering influences are the ferruginous sandstone deposits; hence in many places the surface, already denuded of the limestone and gypsum formations, is still covered with hard and blackish sandstone masses, which yield a metallic sound under the wayfarer's footsteps.

The Ghadames oasis is encircled by an earthen rampart 3½ miles in circumference, formerly raised against the marauding tribes of the desert, but now possessing no defensive value. Broken here and there by broad gaps at some points, especially on the west side, it serves to accumulate the sands, which are thence blown by the winds into the streets and gardens. The town, comprising several quarters, lies in the south-west part of the oasis, where have been sunk the wells on which the inhabitants depend for their supply of water. The chief spring fills a vast basin of Roman construction. Usually known as the fountain in a superlative sense (*ain* in Arabic, and *tit* in Berber), it is more specially named the Ain-el-Fers, the "Mare's Spring," or, in the local Temahaq dialect, the Arah-Shuf, or "Crocodile's Spring." Its slightly thermal water (85° to 86° F., or about 17° higher

than the mean temperature of the oasis) comes from a natural reservoir lying probably at a depth of 465 feet below the surface; and although containing about twenty grains of salt to the pint, it has no disagreeable taste when allowed to get cold. Multitudes of leeches swarm amid the surrounding aquatic plants.

Besides this spring and the other artesian wells, seven or eight ordinary wells some 65 feet deep yield a liquid with a temperature of not more than 65° F., but so charged with salt as to be undrinkable. With every economy, the water from all

Fig. 23.—The Ghadames Oasis.
Scale 1 : 16,000.




sources scarcely suffices to irrigate some hundred and eighty-five acres, in which are crowded sixty-three thousand palms, and where are also cultivated various fruit-trees and vegetables, all of poor quality except the melons and pistachios. Formerly the whole space of four hundred acres comprised within the ramparts was under cultivation; but during the course of centuries the water supply has fallen off, or else the natives have relaxed their efforts, wearied with the incessant struggle to preserve their lands from the ever-encroaching sands.

In few other districts is the land more subdivided than in the Ghadames oasis,

where every head of a family has his separate plot, be it only a single palm, or the

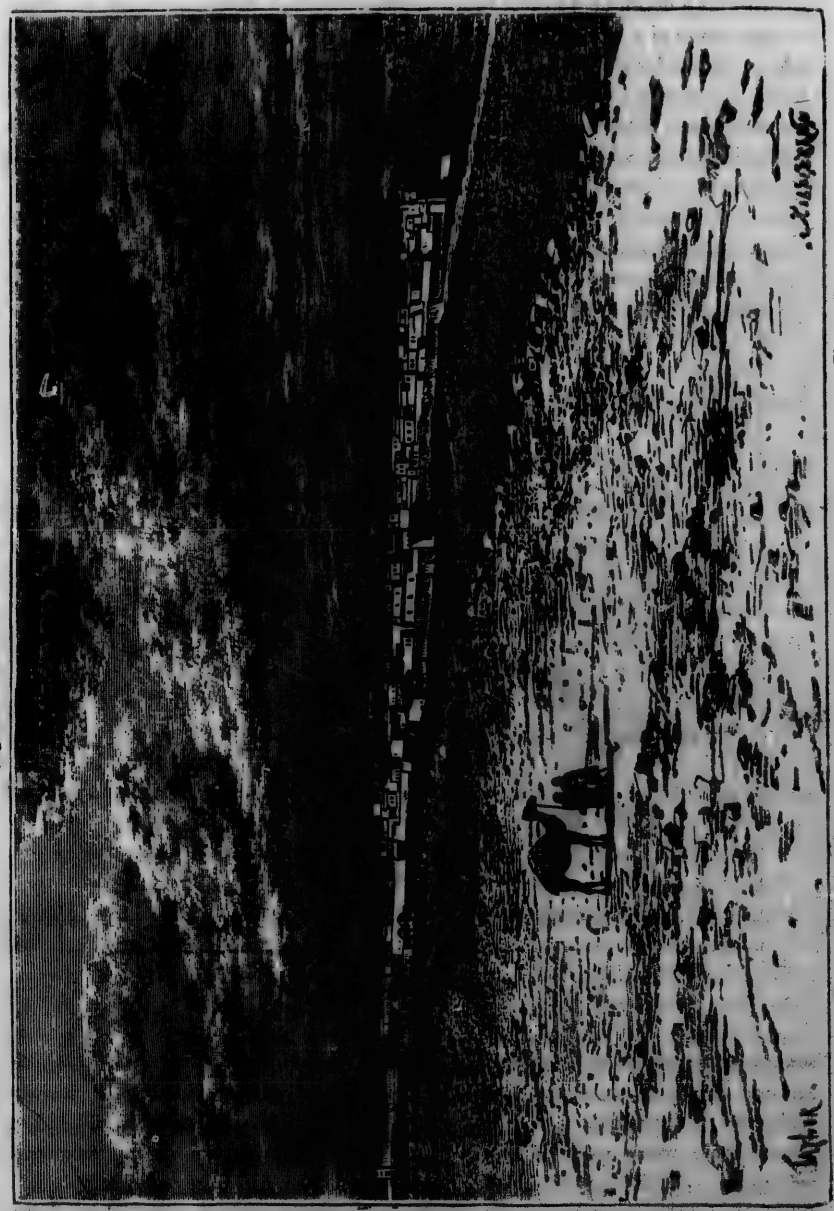


Fig. 24.—General View of Ghadames.

ground on which it grows; hence all land capable of being irrigated commands a price far higher than its productive value.

## Topography.

The town of *Ghadames* presents the same constructive features as Siwah, and the ancient Berber cities reaching as far as Nubia. The streets are vaulted passages, admitting the light only at rare intervals through apertures in the walls of the houses. These passages are used by the men and female slaves alone; but so dense is the gloom that to prevent collision a warning voice or sound is needed, the men stamping on the ground, the women uttering a sort of plaintive murmur. The better classes never go abroad without a lantern. The houses, either of stone or adobe, consist mostly of a ground floor, serving as a store, and of one story comprising a central apartment encircled by smaller rooms. The general disposition is the same as in the Moorish houses, only instead of being open to the air the dwellings are lit through a hole in the flat roof. All the terraces, although enclosed by low parapets, communicate with each other, so that the women, for whom this space is exclusively reserved, are able to walk from one end of the quarter to the other; real streets are even laid down along the houses above the tunnels, set apart for the men and slaves. On the terraces a special market is daily held for the barter of jewellery and textiles, but inaccessible to the men. Grown-up children pass the night abroad, boys in the gardens, on the seats of the cross-roads or in unoccupied houses, girls with some female friend or relation whose husband is from home.

The natives of Ghadames are fundamentally of Berber stock, and the current speech closely resembles that of the Tuaregs and of the Siwah, Aujila and Jofra oases. Nevertheless the race is very mixed, both features and complexion betraying strains of Arab and Negro blood. The people, who, like the Tuaregs, go abroad either wholly or partly veiled, have regular features; but they lack the strength and lithe figures of their Algerian neighbours. Most of them are of a lymphatic or nervous temperament, and the stranger is surprised to meet so many with glossy skin, flaccid flesh, lustreless eyes, thick lips, feeble voice. Yet the women are distinguished by really noble features, and a graceful form enhanced by a charming costume.

As in most Berber towns, and in the mediæval cities of Italy, the population is divided into hostile factions, whose rivalries appear to spring, to a very slight degree, from racial differences. The Beni-Wasit, themselves subdivided into four *shueras* or secondary groups, hold the southern and eastern parts of the town; the Beni-Ulid, or Tesou, with two shueras, the north and north-west, the latter devoted mainly to trade, the former chiefly householders and agriculturists. Before the Turkish occupation, both factions often engaged in mortal combat, and although now dwelling peaceably together, such is the force of tradition that they still remain confined to their respective quarters, never exchanging visits or intermarrying. They meet only on the market-place, or outside the ramparts in the convents of the religious brotherhoods. But many natives of Ghadames will recognise each other as fellow-countrymen only in such remote places as Tripoli, Kano, Timbuktu, visited by them during their trading expeditions.

Besides the civilised Berbers, the population of Ghadames also comprises members of the neighbouring Arab tribes: Suafas, or immigrants from the Algerian Sûf, Negroes from West Sudan, and even Fullahs from the Upper Niger. The descendants of the black slaves constitute a separate group, that of the Atriya, who commonly speak the Hausa dialect, but do not enjoy full civic rights. A branch of the Azjar Tuaregs encamp in large numbers on a plateau near the south-west side of the town, of which they are the most faithful allies. But for their co-operation all trade relations between Ghadames and the Tsad and Niger basins would be suspended, and in some respects the inhabitants consider themselves members of the Tuareg confederacy. A Targin chief reduced to want is supported at their expense; and every Targin, whether free or slave, receives hospitality during the time of his residence in the town.

But the prevailing influence amid all these diverse elements is Arab culture, although the Arabs themselves are far from numerous in Ghadames. The traders, all polyglots, and sufficiently instructed to read and write, use Arabic in their correspondence, and their Berber dialect itself is largely affected by words and expressions drawn from the Koran. No traces have survived of the old Berber alphabet, although there is a local system of numeration by fives, by means of which commercial transactions with distant towns can be kept secret.

The produce of the surrounding gardens would scarcely suffice for the requirements of the seven thousand residents in Ghadames for a single month; nor do the few local industries contribute much to the wealth of the people, who depend for their support chiefly on trade. Thanks to their relations with most of the markets in West Africa, they had acquired a certain affluence when the Turkish Government began to hamper their relations with vexatious regulations. Like Murzuk and the other intermediate marts between Tripoli and Sudan, Ghadames has lost much of its prosperity since the restrictions imposed on the slave trade and on the direct traffic with Algeria and Tunis. The native dealers, who have to pay the Turkish Government a yearly impost of £10,000, enjoy a high reputation for probity; their word is always enough, even in the case of transactions involving a credit of several years. When a caravan loses any camels along the trade routes kept open by the friendly Ajar tribe, the loads are left on the spot sometimes for over a year, without any danger of being carried off by casual wayfarers.

Owing to the unwarlike character of the people, their caravans, like those of the ancient Carthaginians, are always escorted by mercenaries. At the time of Largeau's second visit in 1878, a guard of ten invalided Turkish soldiers sufficed to enforce respect for the authority of the Sublime Porte. On their trading expeditions meeting people of all beliefs—Mohammedans of diverse sects, Christians, Jews, and Pagans—the Ghadamesians have in general acquired a broad spirit of tolerance, although still strict observers of the Melekite rites. Jews, however, are not suffered to settle in the place, probably owing to professional jealousy. No branch of the widespread Senûsi confraternity was established in the oasis till the year 1876. Polygamy is rarely practised in Ghadames itself, although the traders have taken wives in the various cities where they have to reside for any length of

time. Amongst the peculiar marriage ceremonies, is the imposition of absolute silence on the bride for the first seven days of the union.

The only local antiquities are the already described Roman reservoir, a bas-relief said to betray Egyptian influences, a few columns and hewn blocks, besides a ruined tower with an inscription in Greek and unknown characters, "perhaps in the Garamantine language," but in any case a precious monument of the commercial relations established at least two thousand years ago between Cydamus and the Hellenic world. Outside the walls Duveyrier discovered a Roman inscription dating from the time of Alexander Severus, a monument of great historic importance, showing that Cydamus, at that time attached to the administration of Lambesa, remained at least two hundred and fifty years under Roman rule after its conquest by Cornelius Balbus in the reign of Augustus.

On the plateau forming the camping-ground of the Azjar Tuaregs stand some shapeless columns, by the natives called El-Esnâmen, or "The Idols." According to Duveyrier, these pre-Roman ruins are the remains of Garamantian monuments, perhaps tombs. In the neighbourhood a space of some square miles is covered by the cemetery of Ghadames, in which the older monuments are always respected, and amongst these Roman sepulchral inscriptions may yet be discovered. To the north the isolated dolomitic eminence of *Tukut* is crowned by the ruins of a town, whose inhabitants have escaped to Algeria in consequence of a standing feud with their neighbours.

The *Derj* oasis, lying over 60 miles due east of Ghadames, in the same area of drainage, might hope to become the commercial centre of the district, if the local traffic depended entirely on the abundance of water and vegetation. Derj, or the "Step," so named because it occupies the first stage on the Red Hamâda route, is surrounded by plantations containing some three hundred thousand palms, and yielding a far greater supply of dates and other fruits and vegetables than is needed for the local consumption. Hence the Ghadamesians, who from remote times have owned more than half of the trees, draw much of their supplies from Derj.

The inhabitants of the oasis, grouped in four villages, claim some to be Berbers, others Arabs, but are in fact so mixed by crossings with slaves, that they look more like Negroes than Semites or Hamites. In every house a state room is decorated with copper vases representing the price paid for their wives, who pride themselves in displaying all this glittering treasure.

North-east of Ghadames, on the slope of the plateau facing the desert, lie the palm groves of the *Sinaun* oasis, one of the caravan stations on the route between Ghadames and Tripoli. But this oasis is being gradually devoured by the pitiless sands, which are invading the plantations and gardens, filling up the ditches, and encroaching upon the two villages, whose enclosures are already in ruins. A large number of the inhabitants, the Aulad-Bellil, a noble race proud of their descent, have already emigrated to Ghadames.

## CHAPTER VII.

### RHÂT.

RHÂT (Ghât), a trading place like Ghadames, also forms a Berber community, which since 1874 has been officially brought under Turkish rule, so that any European power occupying Tripoli would doubtless claim this district as an integral part of the conquest. Lying much farther from the coast than Ghadames, 540 miles in a straight line from the Tripoli seaboard, it is also separated from the coastlands by the Red and Tinghert ("Limestone") hamâdas and by other plateaux, as well as by the region of lofty dunes.

But even more than by nature, Rhât was defended from the prying curiosity of the whites by the fanaticism and commercial jealousy of its inhabitants. Ismail Bu-Derba, the first explorer who visited it in 1858, was chosen for this mission because of his Arab nationality; but since then the mysterious land has been reached by Richardson, Overweg, Barth, Duveyrier, Von Bary, and Caillagh; the two last named here died. In 1869 Miss Tinné was assassinated on the route thither, and in 1874 Dournaux-Duperré and Joubert met the same fate within one or two days' march of the En-Azhâr wells, between Ghadames and Rhât. In 1881 also the three French missionaries, Richard, Morat, and Pouplard, were murdered by the Tuaregs and Shaambas, a day's journey south of Ghadames, while attempting to reach the same place. Duveyrier was compelled to stop within half a mile of Rhât, the inhabitants having threatened him with death if he attempted to penetrate into the town. From this distance, however, he contrived to make a sketch of the place from his own observations, supplemented with data supplied by some of the natives.

Standing at an approximate altitude of 1,300 feet above the sea, Rhât lies, like Ghadames, on the slope of the basin formerly watered by the great River Igharghar; but the valley occupied by it is now choked by sands, and the rare flood-waters are soon lost amid the northern dunes. Like Ghadames, Rhât also is indebted to its geographical position for its commercial prosperity. Its narrow valley affords the most convenient route between the highlands and plateaux, which in this part of the continent form the waterparting between the Atlantic and Mediterranean

basins. Westwards rise the volcanic heights of Tasili, at whose foot winds the Aghelâd, or "Passage," followed by the main caravan route from Rhât to Ghadames, and continued northwards by the Wadies Titerhsin and Igharghareu, the latter a tributary of the Igharghar. To the east stands the almost inaccessible schist and sandstone Akakus range, which in a whole generation has scarcely been scaled by more than two or three venturesome Tuareg mountaineers. At its northern extremity this rugged chain is skirted by the path leading to Fezzan, which through the arid Tanezzuft valley reaches the Murzuk plateau by the Rhallé pass and the stony Taita wastes.

Fig. 25.—Rhât.

Scale 1: 715,000.

Southwards the Rhât valley rises gradually in the direction of a hill about 4,000 feet high, which marks the northern verge of the Sahara. Here, amid huge blocks and pillars of sandstone, and within sight of granitic domes and pyramids, ends the long narrow defile, where the traders have established their chief depôt between Ghadames and the Sudan. Barth, who has named this section of the waterparting the "Adsjar Uplands," identifies them with the Jebel Tantama of mediæval Arab writers.

Rhât stands on a slight eminence at the north-west foot of a rocky hill. Within the ramparts it is almost geometrically divided into six quarters by streets terminating at as many gates. The houses are in the same style, but generally smaller and less numerous, than those of Ghadames. Within the enclosures the population scarcely exceeds four thousand; but outside are a number of villages, and in the intervening space is held the annual fair, on which the prosperity of the plain largely depends. The surrounding plain is here and there dotted over with clumps of palms and other trees; but the oasis nowhere presents the continuous stretches of verdure seen at Ghadames. Yet it would be easy to extend the area of culti-

vation, abundance of water lying at a slight distance below the surface. Artesian wells sunk at several points yield a copious supply for irrigating the surrounding tracts.

### Topography.

According to the local tradition, Rhât is a relatively modern town, having been founded some twelve or fifteen generations ago by the Ihajenen Berbers, jointly with a few neighbouring tribes. Amongst these were the Kel-Rhafsas, in whom Duveyrier recognises the descendants of those who in Roman times occupied the town of *Rapsa*. This military and trading station must doubtless have stood somewhere in the vicinity at the entrance of the defile connecting the two slopes of the Sahara. But in any case the Ihajenens and other neighbouring Tuaregs have long been the masters, or at least the protectors, of the district. In the town, however, the nomads have gradually been replaced by the descendants of traders from other parts of North Africa. Nevertheless the family is still regarded as belonging to the old stock, so long as the descent is maintained through the female line; for the Ihajenens are Beni-Ummia, or "Children of the Mother," amongst whom rank and property are transmitted not from father to son, but from uncle to nephew. Hence at Rhât the Berber law reserves to the women, representing the old rulers of the land, the administration of the inheritancy. They alone dispose of dwellings, springs, and gardens, in administrative capacity and commercial enterprise showing themselves in no respects inferior to the men. In some families the children succeed to the movable and real property; but the eldest son of the sister alone can claim the seignorial rights over the serfs, and the traditional dues levied on travellers.

Most of the non-Tuareg inhabitants come from Ghadames and Twât, or else are of the *hartenes* class—that is, the children of Negro women abandoned on the route by their husbands. But all these various ethnical elements, recently increased by the Turkish garrison troops, are sufficiently subject to the local traditions to adopt the native Berber dialect. Most of the inhabitants also wear the Tuareg costume—pantaloons, blouse, and veil—and still adhere to the old trading traditions of the place. For centuries the same routes are followed, fixed by custom and the exigencies of the tribes claiming transit dues in return for their protection. Thus in order to reach Timbuktu, the caravans from Rhât have to make an enormous detour by the Twât oasis. Direct intercourse with the French Algerian possessions is also interdicted by the Turks and the fanatic Senûsiya brotherhood, which has been very powerful in the oasis since the middle of the century. For its support the town is thus reduced to the profits of its trade with the distant Sudanese markets between the Niger and Lake Tsad. The produce of the local industries and agriculture is even less important than that of Ghadames. The surrounding district nourishes scarcely three thousand date-palms, amid which the Tuaregs have set up their stone or earthen houses, their huts of branches, and skin tents.

In the oasis the only other centre of population is *Al-Barkat* (*Barakat*, *Berke*),

a small Tuareg village lying some 6 miles farther south. The clean and pleasant spot, better watered and more fertile than Rhât, presents an agreeable picture to the traveller, such as he will not again meet for hundreds of miles along his southern route. Yet the ruins occurring here and there in the surrounding districts show that these now arid and almost inaccessible uplands were also at one time inhabited. Even in the Jebel Akakus the natives point to the site of the ancient city of *Tenderart*, where are seen the myrtle, necessarily introduced by a civilised people, and sculptures carved on the face of the rock.

A few domestic zebus in the Rhât oasis are all that now survive of a species formerly abounding in the whole of Tripolitana, at a time when the rains were more abundant, and the now dried-up wadies veritable rivers.

North of Rhât the isolated crescent-shaped Idenen range raises its jagged crest between the narrow Aghelad defile and the valley skirting the western foot of the Akakus highlands. Idenen is known also as Kasr Jenun, or "Castle of the Jins," the evil spirits for thousands of miles round about being supposed to assemble here for the concoction of their maleficent spells. Richardson nearly lost his life when scaling these rugged heights, and Barth failed to reach the summit. Worn out by fatigue and devoured with fever, the daring explorer fell at the foot of a tree, where he remained seven-and-twenty hours before he was discovered by his attendants. His failure naturally confirmed the dread felt by the natives in approaching these dangerous mountains. Yet their mean altitude seems to be little over 2,300 feet, above which rise, 200 or 300 feet higher, sandstone towers isolated or grouped in frowning citadels.

## Government and Administration of Tripolitana.

The portion of Tripolitana annexed to the Turkish empire constitutes a vilayet, like the other Ottoman provinces in Europe and Asia. The authority of the Sultan is, therefore, exercised directly, not through a vassal sovereign, as was till recently the case in Tunis, and is still in Egypt. The vali, or governor, is usually chosen among the superior officers of the army, generally ranking as a *mushir*, or marshal, and commanding a body of troops which at times scarcely exceed five thousand, but which are at present estimated at about three times that number. Under this pasha, who disposes at once of the civil and military authority, are the mutaserifs and kaimakans, administrators of the secondary provinces, while the kasas or cantons are ruled by mudirs, who have replaced the former kaids. But each tribe and Arab commune still retains its own headman, who in towns and villages takes the title of sheikh-el-beled. Their functions, supposed to be exercised gratuitously, are in reality the most burdensome to the unfortunate people, for justice is dispensed, for the most part venally, by the sheikhs. While the revenue of the vilayet is estimated by the Minister of Finance in Constantinople at from £120,000 to £160,000, probably ten times that amount is actually raised in the form of taxes and fines.

In the Berber communities, where the democratic instinct is much more

developed than amongst the Arabs, the general interests are in the hands of the *jemaa*, or assembly, at whose deliberations all take part freely. By it taxes are imposed, criminal charges heard, fines regulated, and in serious cases sentence of banishment pronounced. But in important places, such as Ghadames and Rhât, the local constitutions have been modified to the profit of the Government, which appoints a mudir, whose almost exclusive mission is to look after the revenue. In this he is assisted by a mejeles, or council, consisting of a mufti, the sheikh-el-beled, and four notables chosen by their peers and confirmed by the pasha, on the recommendation of the mudir. The assembly occupies itself chiefly with commercial matters, while the special communal interests are managed by a jemaa elected by the inhabitants of the different quarters.

A cadi, or rather a naïb, or lieutenant of the cadi of Tripoli, decides all cases of inheritance, marriage, and divorce. The zaptiehs, or police, armed with staffs, are responsible for the maintenance of order in the towns, although they are themselves usually convicts condemned to exile by the tribunals of Constantinople. At the same time most of the higher officials in Tripoli and the provinces are banished to this African region mainly at the pleasure of the Sultan.

In east Tripolitana nearly all the populations are governed by chiefs belonging to the religious order of the Senûsiya. They are the real rulers, administering all affairs either directly, as in the Kufra oases still independent of Turkish authority, or through the medium of officials, whose functions are mainly limited to receiving their share of the local revenues.

In Fezzan the chief functionaries, as well as the garrison officers, are all of Turkish nationality, the sheikh-el-beled alone excepted, who is always chosen in the same clan. The ancient royal family, which comprised about two hundred members, has been completely exterminated.

## CHAPTER VIII.

### TUNISIA.

WITHIN its present limits, Tunis does not form a geographical unit distinct from the rest of Mauritania. Its highlands belong to the Algerian orographic system, while its chief rivers take their rise beyond the frontiers, which are themselves frequently displaced, and which, since the French occupation, have acquired a purely conventional value. Hence it becomes impossible to study the main physical features of Tunisia apart from the rest of the Atlas regions, of which it forms little more than a special geographical division. Nevertheless, certain natural limits may be traced along a line of rugged and almost uninhabited hills; its historic evolution also differs in several respects from that of Algeria, while its inhabitants are still grouped under a distinct political administration.

Taken in its broader sense, and not in its more restricted historic acceptation, Mauritania forms one of the best defined natural regions in the world. It comprises the portion of North Africa which embraces the whole of Tunisia, Algeria, and Marocco, and which was designated by the Arabs under the general appellation of Gharb, or Maghreb, that is, the "West," in a pre-eminent sense, and even Jezirat-el-Maghreb, or the "Western Island." Belonging, like Spain, the south of France, and Italy, to the Mediterranean zone, it is far more compact than those south European lands, presenting a surprising simplicity of outline instead of a contour broken by deep bights, headlands, and peninsulas. Its general form is that of a regular quadrilateral, limited northwards by the Mediterranean, east and west by the Gulf of Cabes and the Atlantic, south by another ocean of sands, clays, rocks, and shingle. This very desert space, or at all events a great part of it, may itself have possibly at one time been a marine basin, as Bourguignat has endeavoured to show, and as has since been asserted by many writers. But this Saharian sea, dry land at all events since the early Miocene period, has left no fossils to attest its former existence, and it is now known that the proposed attempts to restore the inland basin could result in nothing more than a chain of lakes flooding the shotts standing at a lower level than the Gulf of Cabes.

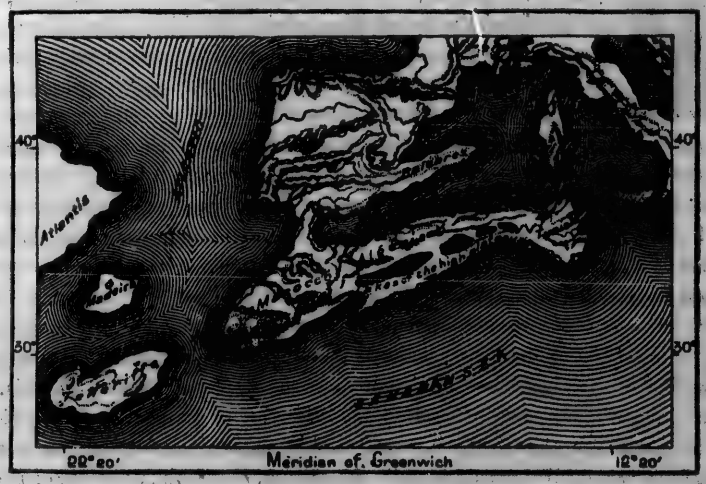
But however this be, Maghreb still remains, from the geographical standpoint, a perfectly isolated upland region, connected by no rivers or great natural or arti-

ficial highways with the fertile and thickly peopled districts of Central Africa. It must remain a simple dependence of Southern Europe until it becomes attached to the Senegal and Niger basins by such routes as modern industry may yet create; in a word, until the vast obstacle of the intervening desert has been suppressed.

## The Atlas Orographic System.

The Atlas Mountains, which constitute the backbone of Mauritania, and which would justify its being called by the name of Atlantis, apparently applied to it about the dawn of written history, forms a continuous orographic system from the Atlantic Ocean to the Sicilian waters. But they do not develop themselves in a

Fig. 26.—Ancient form of Mauritania, according to Bourguignat's Hypothesis.
Scale 1 : 34,000,000.




single range, as formerly represented on the maps, for they rise in distinct ridges or confused masses, and at many points are replaced by slightly rolling tablelands. The western section, to which the term Atlas is more specially applied, alone constitutes a true Alpine chain, whose highest peaks probably attain an elevation of over 13,000 feet. Hence they were described as the loftiest mountains in the world by the early Phœnician and Greek navigators, who beheld their alternately blue and snowy crests standing out against the grey or azure background of the firmament. Herodotus speaks of Mount Atlas as the "Pillar of Heaven," an expression not unnaturally applied also to Mount Etna and other lofty summits constantly wrapped in cloud and fog, which to the ancients seemed to represent the true celestial vault. But in reproducing the reports of explorers, legend could scarcely fail to personify the Atlas, giving to the word a sense different from its primitive meaning. On its

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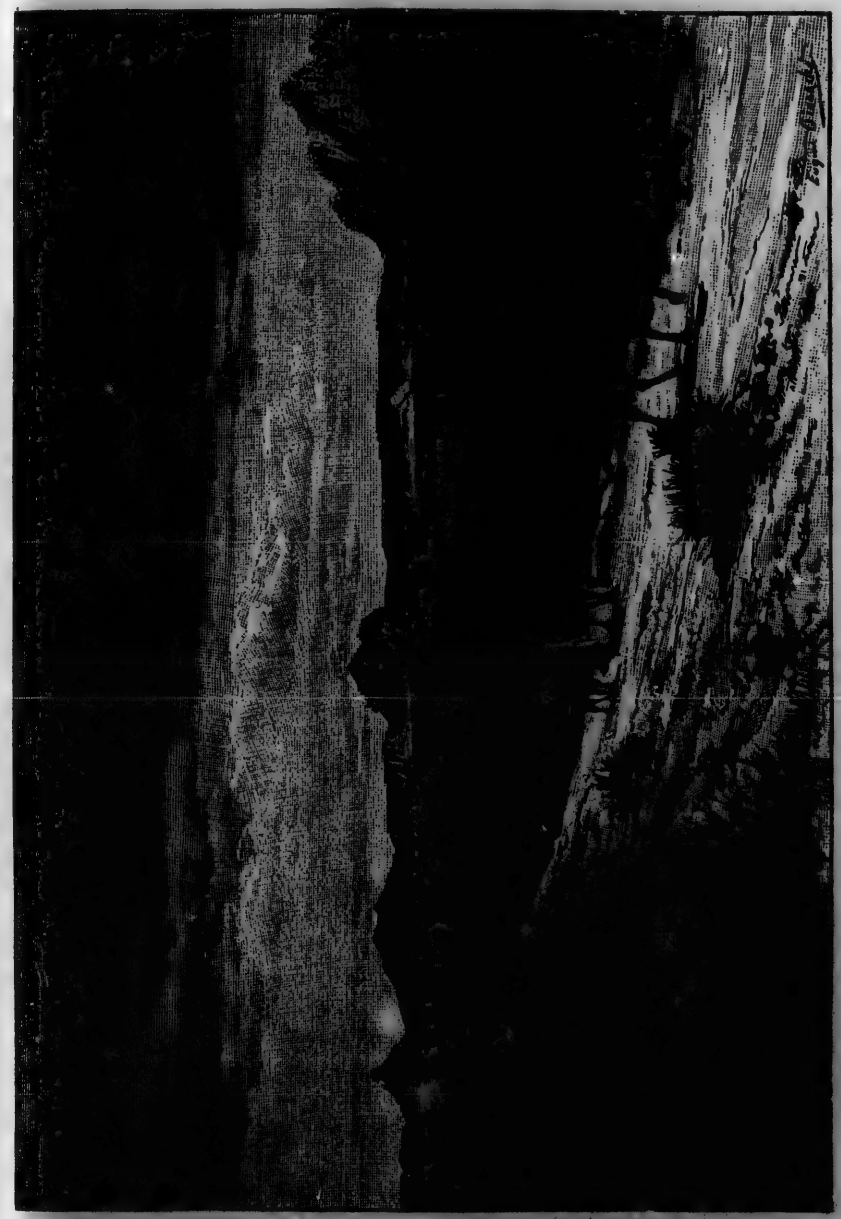
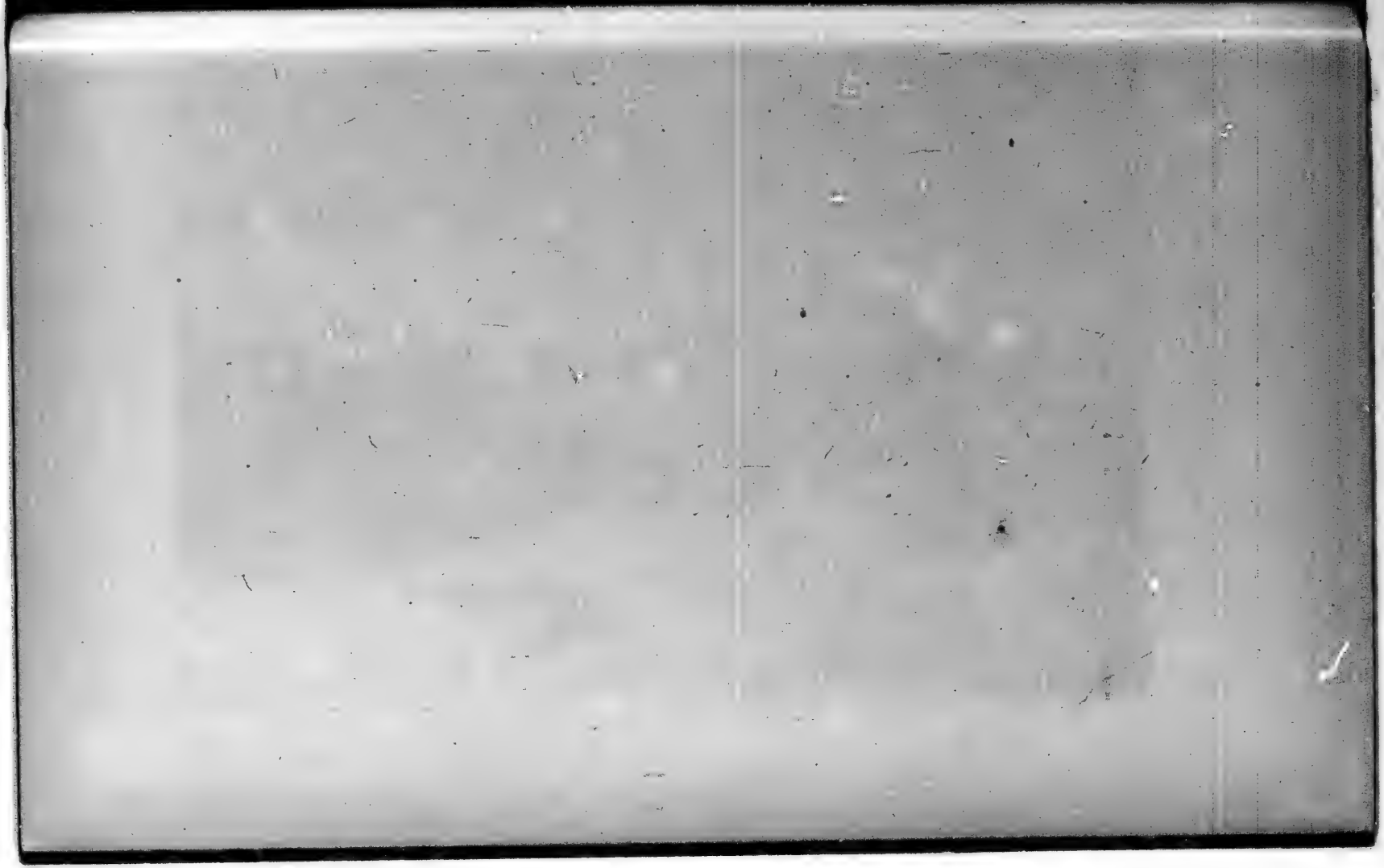


TUNISIAN LANDSCAPE—VIEW TAKEN FROM THE TELLAT PASS.



brawny shoulders it now bears the world itself, and sculptors represent it as a giant straining every muscle beneath the huge mass of the terrestrial globe. But according to most authorities, the term Atlas is simply a softened form of the Berber word *Adrar*, or "Mountain." In Marocco the range is still called Idraren, or, more simply, Deren, the "Mountains," so that for the last two thousand years—that is, since the time of Strabo—the name has undergone no change, doubtless because the same Berber populations still dwell at its foot.

Although now separated from Spain by the Strait of Gibraltar, the Atlas belongs none the less to the same system as the Sierra Nevada and the other sierras of the Iberian peninsula. They are certainly loftier, and, with the southern chain of the anti-Atlas spurs and secondary offshoots, occupy a greater superficial area; but they consist of the same rocks, disposed in the same order, while their general direction from west-south-west to east-north-east is maintained almost parallel with the Spanish ranges. Like these also the Mauritanian highlands are partly interrupted by plateaux of great elevation. Thus, east of Marocco, the line of the Atlas is continued throughout Algeria and into Tunisia by the zone of the great plateaux at a mean altitude of over 3,300 feet. The Algerian ranges are in fact for the most part merely border chains skirting the plateaux north and south. The northern or coast ranges have the greatest mean breadth, about 50 miles, those on the south being scarcely 30 miles broad, from the edge of the plateaux to the verge of the Sahara. But, towards the east, on the Tunisian frontier, the two highland zones converge and develop fresh chains, which continue in the normal direction of the whole system. Even the extreme peninsula of Dakhla-el-Mahuin, projecting between the gulfs of Tunis and Hammamat, runs south-west and north-east in the direction of Sicily.

Between the Marocco frontier and Central Algeria none of the summits attain an elevation of 6,600 feet; but in Jurjura and the Jebel Aures, west of Algiers, the highest peaks exceed 7,500 feet. Farther east the hills gradually fall, the loftiest crests in Tunisia rising to a height of not more than 5,000 feet. From one extremity to the other, the system has a length of no less than 1,400 miles.

Owing to the parallel disposition of the highlands, plateaux, and plains, in the long Mauritanian quadrilateral, the whole region from the Atlantic to the Gulf of Cabes is distributed in narrow zones, differing from each other in physical appearance, climate, products, and inhabitants. The fertile coastland valleys support an agricultural population, while the upland steppes are peopled by nomad pastors and their flocks; in the southern oases, encroaching on the desert, tillers of the soil again constitute the bulk of the community. Thus are developed in parallel lines a number of distinct zones, whose inhabitants differ in their pursuits, character, traditions, and often even in origin. An interchange of necessary commodities takes place between the various zones; but the relations are not always pacific, and neighbouring tribes often contend for the conterminous territory.

This natural distribution of Mauritania into longitudinal sections, each with its distinctive ethnical conditions, is certainly one of the chief causes of the political dismemberment of the land. The littoral zone, stretching from Cape Bon to Cape

Spartal, was far too long for its slight breadth, and thus became broken into several fragments, analogous to those which destroyed the unity of Italy. But the form and outlines of countries have a continually decreasing influence on the destiny of their inhabitants, the work of man tending more and more to reduce the importance of distances and diminish the contrasts of climate and relief. Tunis is at present more intimately associated with Tangiers in the extreme west than it formerly was with the adjacent districts of Bon and Cabes, separated from Goletta Bay by stormy headlands.

In their hydrographic systems Tunisia, Algeria, and Marocco present analogous conditions. The northern slope of the Atlas, facing the Atlantic and Mediterranean, is too narrow to develop large fluvial basins. Hence only a small number of watercourses, rising on the upland steppes, or at least fed by affluents from those regions, have succeeded in forcing their way through the border ranges seaward, thus presenting a development analogous to that of the European rivers falling into the Mediterranean. Thus the Maluya of Marocco, the Algerian Shelif, and the Mejerda of Tunis, are exceeded in length only by the Rhone and Ebro.

On the Sahara slope there would certainly be no lack of space for the running waters to excavate long channels in the direction of the Niger, the Atlantic, or the Syrtes. But here the rainfall fails, and the streams have no volume corresponding to the extent of their basins. Except the Draa, which rises on the southern slope of the Marocco Atlas, but fails to reach the Atlantic opposite the Canary Islands, there is not a single stream in the Sahara region which flows freely on the surface from its source to the sea. The beds formerly excavated, when the rainfall was more abundant, may, however, still be traced in spite of the shifting dunes, and it is evident enough that they formed water systems rivalling in extent that of the Euphrates. One of these old streams, rising in the Atlas, flowed southwards to the Niger; another, the mighty Igharghar with its vast system of affluents, formed in the Jebel Ahaggar and Jebel Tasili, took a northerly course to the depression of the Algerian shotts; but within the present geological period it has had no outlet to the Gulf of Cabes. Its area of drainage, probably exceeding 320,000 square miles, is scarcely inferior to that of the Danube.

### Ethnical Elements.

Owing to the substantial uniformity of the physical, hydrographic, and climatic conditions throughout Mauritania, the local flora and fauna must also everywhere betray a certain resemblance, although in many places the migrations have been checked by natural obstructions, thus giving rise to many gradual modifications of species. Between Capes Bon and Nun are met representatives of the same races of mankind, differing in their distribution according to the endless variety of the environment and the chequered course of events. Everywhere in Mauritania the Berber element, of unknown origin, constitutes the fundamental stock, and according to Faidherbe still comprises at least three-quarters of the present population, estimated at about ten millions between the sea and the desert. But although

forming the great majority, the Berbers have at all points been driven from the plains to the uplands. Peaceful tillers of the soil, too sluggish to progress, too slow to combine together, they have been fain to yield to the more warlike Arab tribes.

The Arabs themselves, forming probably less than a sixth of the Mauritanian population, are found either in settled or nomad communities scattered over the whole region as far as the Atlantic seaboard. But while more numerous in the central districts, they diminish gradually from east to west, according as they recede from the Arabian peninsula.

The blacks, who by intermixture have also tended much to modify the other ethnical elements, were everywhere originally introduced as slaves or mercenaries. But they are naturally most numerous in those districts which maintain the most frequent relations with their native land; hence they prevail chiefly in Marocco, which enjoys constant commercial intercourse with Western Sudan. Even the imperial family, although claiming descent from the Prophet, is more Negro than Arab.

All the towns throughout Mauritania are largely peopled by "Moors," that is, an endlessly mixed race, resulting from the fusion of Roman, Vandal, Arab, Berber, Italian, French, Spanish, and other Mediterranean elements. If the Moors present a somewhat uniform type from one end of the land to the other, this is assuredly due, not to racial purity, but to their common historic evolution, to the similar surroundings and pursuits of more or less civilised urban communities. The term "Moor" is, however, one of those vague expressions which has often been used in different senses. According to Tissot, it originally meant "Western," while Sabatier thinks it was at first applied to the inhabitants of the upland districts. Mauritania would thus mean "Highlands," as would appear from the root *maur*, *mur* (*Amur*), still met with in all parts of the country. But the Spaniards, and after them European Christians generally, applied the term Moors, Moor, in a much wider sense to all Mohammedans, and in ordinary language even to all pagans. At present its use is restricted to the Mohammedans of the Mauritanian towns, distinguished by their settled life and higher culture from the Arabs of the rural districts. Relatively speaking, the Moors are most numerous in Tunisia.

Although numerically inferior to the indigenous element, the intruding Arab people were long the rulers of Mauritania, and from them the French met with the most obstinate resistance in the conquest of Algeria. It is noteworthy that they have spread with a certain uniformity, especially over all the open plains and least rugged plateaux—a phenomenon due to the successive migrations pressing the tribes continually forward, and thus producing at diverse epochs a general displacement from east to west. Even long before the Hejira, Mauritania had already been invaded by Arab tribes, such as the Luata, or Ruadites, who settled in Cyrenaica during the first centuries of the new era, and who under different names gradually advanced to the eastern districts of Mauritania. Then followed the period of conquest and conversion, which also left a certain number of Arab tribes

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in the country, and four centuries later the great movement of migration, whence are descended most of the Arab nomads at present encamped in the Barbary states.

Then the stream of migration was reversed, and many tribes that had reached the Atlantic retraced their steps eastwards. Throughout Mauritania, Tripolitana, and the eastern oases, the tribes who show the longest genealogies and claim the title of Shorfa, or descendants of the Prophet, are precisely those that for a time sojourned in Marocco before starting on the return journey towards Arabia. Another reaction was that of the so-called "Arabs," who had overrun the Iberian peninsula; but these conquerors were mainly Berbers, who during their long residence in Spain had become intermingled with Ligurians, Iberians, Kelts, Visigoths, and other local populations. Most of these fugitives, known in Mauritania as Andalus (Andalusians), settled in the towns, where they blended with the Moors, thus adding a new factor to the tangled web of local interminglings.

In a region peopled by such diverse elements, not yet fused in a single nationality, it would be vain to look for a spirit of patriotism such as prevails in longer-settled and more homogeneous European communities. Amongst Berbers and Arabs the sentiment of solidarity is restricted to the family or the tribe, so that the consciousness of forming a single people, with common interests and aspirations, is entirely absent. As Mohammedans rather than kinsmen, the Mauritanian Arabs combine against the Christian, who has hitherto always been able to rely on intestine quarrels and tribal feuds to hasten the work of conquest. Nevertheless it was a slow process, in Algeria especially, because the country remained long exposed to the incursions of the southern tribes. Even after its reduction, the seaboard continued to be threatened by the neighbouring highland peoples; and when these were subdued, the inhabitants of the plateaux had still to be conquered. Until the parallel geographic zones were all defended by fortified towns, agricultural settlements, and military outposts, the new conquest, destitute of a solid southern frontier, presented a thousand weak points to the restless border tribes.

But the situation was different in Tunisia, which being enclosed on two sides by the sea and on a third by a chain of fortified stations, was limited southwards by lagoons and the desert. It was, moreover, already traversed east and west by a line of railway, so that a protracted resistance was nowhere possible, even if the French invasion had been preceded by a formal declaration of war. But on the pretext of frontier tribal disturbances in the west, the country was suddenly invaded east and west by overwhelming forces, all strategical points rapidly seized, and the capital occupied even before diplomatic relations were interrupted between the two states. Thus the Bey had no option except to sign a treaty presented at the point of the bayonet, which practically converted Tunisia into a French province.

The limits of Tunisia being still undetermined towards Tripolitana and Algeria, its superficial extent can only be approximately estimated. According to the planimetric calculations of recent geographers, it has a total area of from 46,000 to 47,000 square miles, including the lagoons and sebkhas, which occupy extensive tracts in the central and southern districts. But the triangulation now in progress must soon reduce the discrepancies still existing between the extreme estimates.

Although comprising not more than a thirteenth or a fourteenth of the whole of Mauritania, the relative density of its population gives to this region an importance out of all proportion with its actual extent. Doubtless the population itself must remain somewhat doubtful, pending accurate official returns, and recent estimates have varied as much as from one to two millions; but since the French occupation there is a general consensus that one million five hundred thousand is about the most probable figure. But even accepting the lowest estimate, of one million, Tunisia would still contain a relatively much larger population than either Algeria or Morocco.

## Historic Retrospect.

Nevertheless, even allowing for the consequences of a capricious Government, and for the general displacement of political power, it still seems strange that a country so fortunately situated as Tunisia should have so greatly retrograded, and that it should have been almost completely effaced as a factor in the historic evolution of the Mediterranean lands. Placed at the very centre of the inland sea, at the eastern extremity of Mauritania over against Sicily, possessing a long coastline with deeper inlets and better ports than those of Algeria and Morocco, endowed also with a healthy climate and fertile territory, Tunisia enjoys natural advantages which formerly enabled it to take a leading part amongst the Mediterranean states. In the interior the relief of the land is no less favourable than its general outlines. The longitudinal zones, elsewhere sharply defined in Mauritania, here lose their abrupt contrasts, while the great inlet of the Gulf of Tunis completely turns the rugged coast range, giving access to the inland plateaux through the Mejerda and Melleg valleys. On the east coast, also south of the Gulf of Hammamat, the marine basin penetrates far inland towards the central regions of Algeria, while the great trade route across the desert has its terminus on the Gulf of Cabes.

Through these very gulfs and eastern plains, Phœnicians, Romans, Byzantines, Greeks and Arabs found access to the interior, Asiatic and European influences thus penetrating beyond the seaboard into the very heart of Mauritania. On the very shore of the Gulf of Tunis, commanding at once the central channel of the Mediterranean and the natural approach to the Libyan continent, stood the city of Carthage, which became the emporium of the Old World, and which long arrested the destinies of Rome. Even after its reduction, the province of "Africa," now a European settlement, by its commercial, industrial, and intellectual life, caused its name to be applied to the whole continent.

Again, in mediæval times, Tunisia had its period of culture and prosperity. To a near future therefore belongs the duty of restoring it to the place amongst the nations to which its geographical position naturally entitles it. For the Mediterranean trade it is better situated than Algiers, better even than Naples or Messina; while for the communications with the Niger basin the Lesser offers greater advantages than the Greater Syrtis, thanks to its more advanced position and less dangerous navigation.

## Physical Features.

The mean altitude of Tunisia diminishes gradually from west to east, although the culminating points, ranging from 4,000 to 5,000 feet, are distributed irregularly over the face of the land. One of the loftiest ridges occupies the north-west corner of the country towards the Algerian frontier, where it is disposed in the direction from south-west to north-east. To it may be given the name of "Khumir range," from the now historical group of tribes, who raise their crops of barley, maize, and tobacco in its upland glades. South-westwards it is continued through the scarcely less elevated Ushtetta hills, and by those of the Beni Salah, which are limited southwards by the rugged gorges traversed by the Upper Mejerda in the department of Constantine. Most of their slopes are clothed with forests of leafy trees, and from many of the *kefs*, or summits, nothing is visible to the eye except a boundless sea of verdure. These hills are furrowed by a labyrinth of steep ravines and narrow glens watered by streamlets, which flow either south to the Mejerda, west to the Wed-el-Kebir, or north to the Mediterranean cirques. Here lofty headlands project far seawards, such as Cape Roux, whose abrupt escarpments and ruined forts mark the frontier between Tunis and Algeria. Farther west the Jebel Mermal develops another promontory, opposite Tabarka Island, which still bristles with Genoese fortifications, and which was formerly connected with the mainland by a dyke, now replaced by a tongue of sand flush with the water.

East of the Khumir Mountains stretches the less elevated but still hilly district of Mogod, terminating north-west and north of Bizerta in several capes, such as the Ras-Dukkara, Ras-el-Kerun, Ras-Engela, Ras-el-Abiod, or "Cape White." These northernmost headlands of the African continent advance 20 geographical miles beyond the thirty-seventh parallel, thus approaching 90 miles nearer to the Pole than the point of Ceuta, opposite Gibraltar. Here the Tunisian waters are studded with a few islets and reefs, amongst which are the Fratelli, or "Brothers," known to the Romans as the Altars of Neptune. Farther seawards, in a line with the Sorelle, or "Sisters," the island of Galita, over 1,000 feet high, and consisting of trachyte rocks analogous to the andesites of Ecuador and the blue porphyries of Esterel, can scarcely be geologically connected with the neighbouring mainland, from which it is separated by an abyss 170 fathoms deep. Pliny asserts that the soil of Galita kills the scorpion, a fable still repeated in another form by mariners, who tell us that these volcanic rocks harbour no venomous reptile. The absence of snakes might serve as an additional proof that the island is not a detached fragment of the continent, although it has yielded some land shells of the same species as those found on the opposite coast.

South of Mejerda, the region along the Algerian frontier presents no distinct orographic system. Broken into distinct sections by the Wed Melleg and its affluents, the hills here follow the main line of the Atlas from south-west to north-east, leaving everywhere broad breaches mostly accessible to wheeled traffic. This region in fact forms the eastern prolongation of the upland steppes separating the two Algerian border ranges, which slope towards the Mediterranean and the Sahara

respectively. The Tunisian steppes, forming a continuation of the Aures plateau,

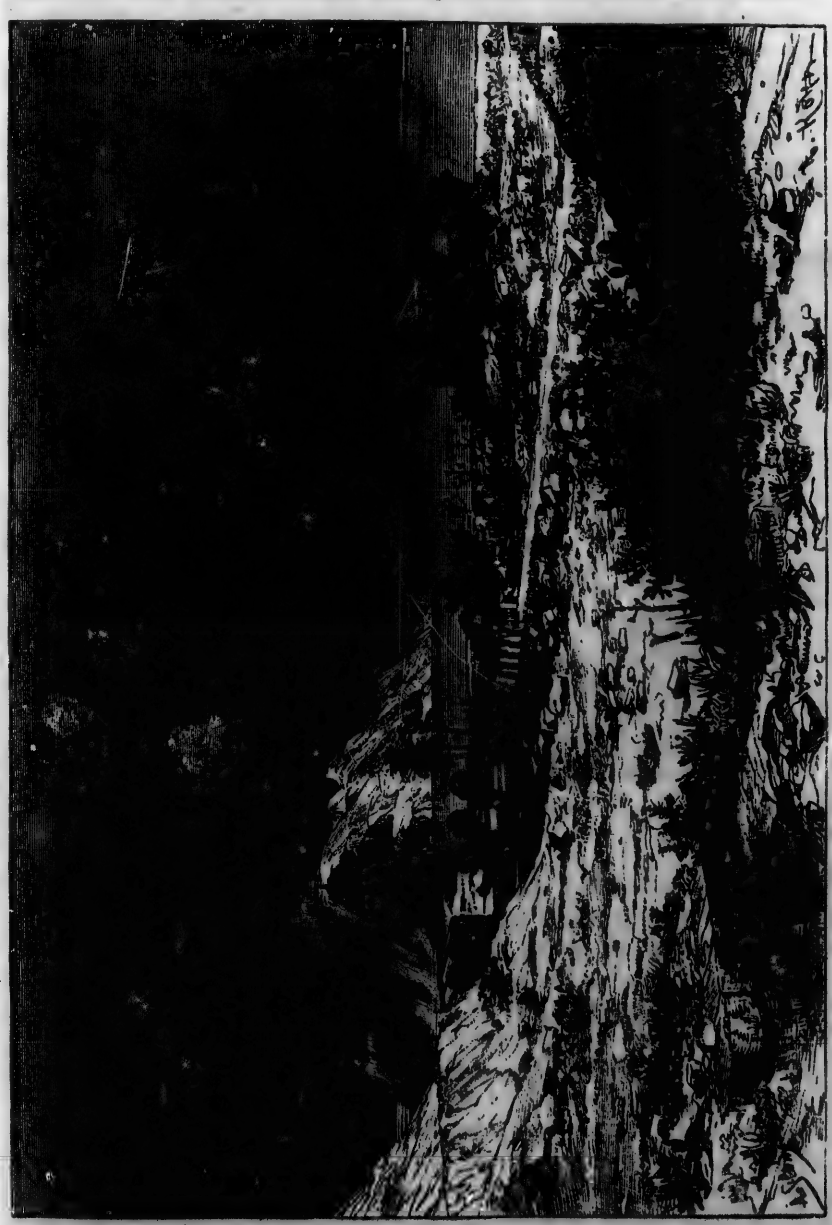

Fig. 27.—Tabarka Island.—View taken from the Coast.

are dotted with isolated eminences, whose summits terminate in tables representing the remains of older formations that have been eroded by the action of water.

Several of these flat-topped precipitous heights have frequently served as a refuge for whole tribes and their flocks. Such, north-east of Tebessa, is the Kalaa-es-Senam, or "Castle of Idols," 4,830 feet high, approached by a dangerous path leading to a village of the Hanensha tribe, the most elevated group of habitations in Tunis.

Farther east, towards the geographical centre of the country, the plateaux are large and uniform enough to have received the name of hamâda, like the stony plains of the desert. Here the whole region culminates in the Jebel Berberu (4,920 feet), the Ras Si Ali-bu-Mussin (5,050), and the Jebel Haluk (4,810). Kessera, the most regular of the hamâdas, whose summit consists of an enormous table

Fig. 22.—Hamada-el-Kessera.

Scale 1 : 180,000.

10 square miles in extent, contains a small sebkha in one of its depressions, and its precipitous slopes are almost everywhere densely wooded.

North-east of the central hamâdas the uplands develop a regular mountain range, which comprises the Jebel Jugar and the superb Zaghwan, which during the Roman epoch gave the name of Zeugitana to the whole of this highland region. Of all the Tunisian heights, none is more famous than that of Zaghwan, whose blue pyramidal crest (4,470 feet) is visible from Tunis. From the Jugar and Zaghwan hills Carthage drew its supply of water, and these sources are still utilised by the modern capital. A conspicuous feature of the landscape is also the Jebel Ressas, or "Lead Mountain," to the south-east of Tunis, from which it is separated by the intervening valley of the Wed Melian. Another steep mountain, the Bu-Kurnein, or "Father of the Two Horns," rises immediately above the southern shore of the Gulf of Tunis, where it is recognised far seawards by its twin peaks resting on a massive foundation of reddish rocks.

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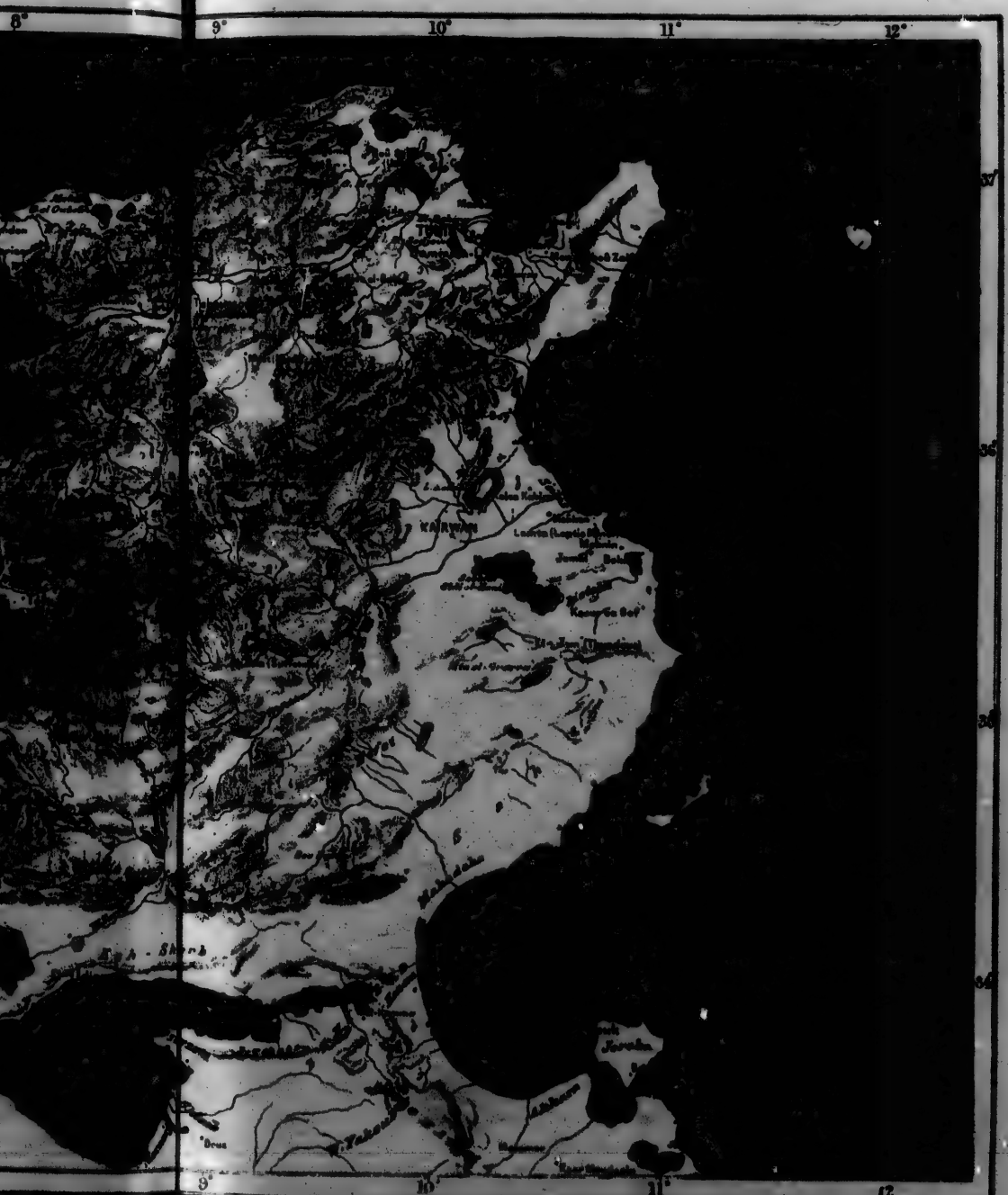


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East of these hills the ground falls to a broad depression, through which will probably soon pass the line of railway intended to connect the shores of the Gulfs of Tunis and Hammamat. Beyond this point the land again rises in the Dakhelat-el-Mahuin peninsula to a height of over 1,000 feet. Here the Ras Fortas stands over against Cape Carthage on the opposite side of the Gulf of Tunis, while at the extremity of the peninsula the various spurs of the Ras Addar (Cape Bon) command the eastern entrance of the great gulf. Its western approach, some 40 miles distant, is indicated by the Ras-el-Khair, more generally known as the Ras Sidi Ali-el-Makki, whose form, like that of the rock of Gibraltar, resembles a crouching lion. The western headland, formerly consecrated to Apollo, and the

Fig. 29.—The Jebel Zaghwan.

eastern, on which stood an altar of Mercury, are both fringed with islets and reefs, and the former is continued seawards by the island of El-Kamala (Plane). Near it is the islet of Pilau, so named because its form resembles the dish of rice (pilau) commonly served at Eastern meals.

West of the Ras Addar rise the two islands of Zembra and Zembretta (Simbolo and Simboletto), Jamur-el-Kebir and Jamur-es-Sebir, the Ægimures of the ancients, both inhabited, and in Zembra attaining an elevation of over 1,320 feet. About 24 miles due east of this coast is the better-known volcanic island of Pantellaria, which however depends politically on Italy, and apparently belongs to the European geological system.

South of the central Tunisian plateaux the uplands diminish in height, and are interrupted by broad valleys, and limited eastwards by extensive plains, where have been collected the brackish waters of the sebkhas. But beyond these depressions the Sahel, or "seaboard," which advances in a semicircle seawards between the Gulfs of Hammamat and Cabes, merges in a rugged plateau which is terminated by vast plains and sharp headlands.

West of the sebkhas, southern Tunis preserves its hilly aspect, mountains here following continuously as far as the great depression of the shotts which forms the natural boundary between Mauritania and the Sahara. Nearly all these ridges are disposed normally from south-west to north-east, in the same direction as the section of the coast of the Lesser Syrtis lying between Cabes and Sfakes. Here rises the remarkable Jebel-bu-Hedma, commanding the saline waters of the Manzuna or En-Nuail sebkha, north-west of the Gulf of Cabes. Its peaks, over 4,300 feet high, rise majestically above a broad region of arid steppes, and in its gorges are still visible the galleries of the old Roman mines, where auriferous ore has been discovered by Fuchs.

Farther west, in the neighbourhood of Gafsa, stands the Jebel Arbet, from whose summit (3,660 feet) a panoramic view is afforded of the surrounding plains, highlands, seas, oases, and sandy wastes. These uplands are limited southwards by an abrupt ravine, through which will run the future railway from Constantine to Cabes. But beyond this gorge the plateau again develops a series of terraces gradually falling towards the Faraun sebkha.

South of the low-lying region of the sebkhas are seen a few hills, the advanced spurs of the range which is continued south-eastwards through the Metmata and Urghamma highlands in the direction of the Jebels Nefusa and Yefren belonging to the Tripolitan system. From the summit of the narrow Urghamma crests are at once visible the Mediterranean and the great desert. They are separated by steppelands from the dunes and rocky heights of the seaboard.

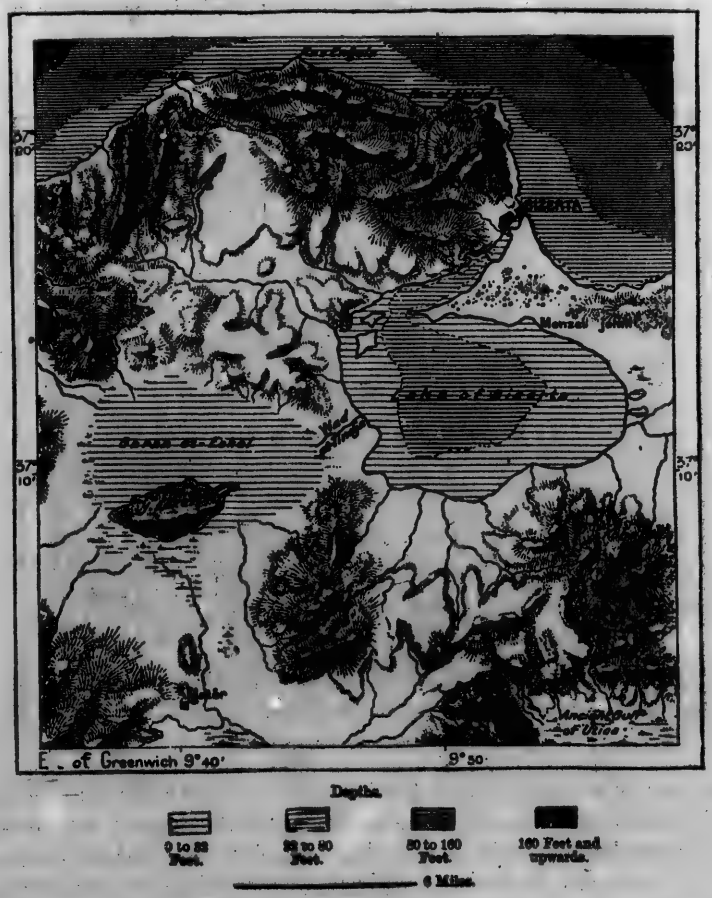
### Hydrographic System.

The Tunisian hydrographic system is readily explained by the relief of the land. Along the "ironbound coast" stretching from Cape Roux to the Ras-el-Abiod there is no space for anything beyond small torrents descending from the neighbouring hills; but farther east, notwithstanding the slight local rainfall, rivers of considerable size have been developed, thanks to the broad depressions here occurring between the ranges and on the plateaux of Mauritania.

Notwithstanding its Wed-el-Kebir, or "Great River," better known under the name of the Wed Ahmor, the northern slope of Tunisia does not boast of a single stream exceeding 60 miles in length. The most copious is the Wed-el-Tin, which discharges into the Eshkŏl or Eskel basin, whose level and salinity vary greatly according to the abundance of the rainfall and evaporation. It has a mean depth of from 2 to 6 or 7 feet, and the reefs abounding in the fossil *cardium edule* show that it was at one time a salt or brackish reservoir, probably a marine inlet

separated from the Mediterranean by a local upheaval of the coast. During the floods the Eskel has an area of over 80 square miles, and its emissary, the Wed-et-Tinja, or "River of the Lagoon," sends down a large volume to feed the neighbouring Tinja Bensert basin. This is the Lake of Bizerta, which communicates through a long channel with the sea. Covering an extent about 60 square

Fig. 30.—Lakes of Eskel and Bizerta.
Scale 1 : 330,000.




miles, it has a far greater depth than the Eskel, even near the banks varying from 10 to 16, and in the middle from 40 to 50 feet. Were it connected by a broad navigable channel with the sea, it would form a spacious harbour, large enough to accommodate all the shipping in the Mediterranean. While the water of Lake Eskel is nearly fresh during the rainy season, that of Bizerta is scarcely less

saline than that of the sea, and the fishes here captured in large quantities all belong to the marine fauna. The alternating current of its emissary, setting now towards the sea, now towards the lake, as already noticed by Pliny, is due to the changes of level caused by the rains, marine currents, and winds. After the heavy rains the channel is converted into a river discharging its overflow seawards; but when the evaporation exceeds the volume contributed by its affluents, the deficiency is supplied by the marine floods. The outflow usually coincides with the east winds, the inflow with those from the west.

The mouth of the Mejerda, the chief river in Tunis, is separated from Lake

Fig. 31.—Gorges of the Middle Mejerda.
Scale 1: 200,000.

Bizerta only by the range of hills terminating on the coast at the sharp headland of Sidi Ali-el-Mekki. The Mejerda, the Bagrada of the Romans and Makarath of the Carthaginians, rises in the same Algerian uplands that send northwards the waters of the Seybus. Following in all its thousand windings the normal direction of the Tunisian coast, it plunges south of the Suk-Ahras plateau into a meandering gorge, now traversed by a railway, and by a road which crosses the torrent no less than twenty-seven times. At Ghardiman, within the Tunisian frontier, after receiving the contributions of numerous torrents, it enters an old lacustrine basin enclosed some 12 miles farther down by the projecting bluffs of two mountain ranges advancing in opposite directions. Through this gorge the river has

excavated a deep channel to the Dakhla plain, an old lacustrine basin at least 800 square miles in extent, which has been filled in by alluvia of the Mejerda, Melleg and other affluents. To a height of 70 feet above the present level of the plain traces occur of the sedimentary deposits formed before the emissary from t

Fig. 32.—Old Beds of the Lower Mejerda.

Scale 1 : 400,000.

lake had cut through the rocky sill above the upper bed, which dammed up the lacustrine waters.

In the Dakhla plain the Mejerda is joined by its largest tributary, the Melleg, which is at least 60 miles longer than the main stream. Rising near Tebessa, in Algeria, it flows mainly north-west and south-east, but loses much of its volume by

evaporation, whence the brackish character of its waters. The course of the two streams across the plain does not appear to have been perceptibly modified within the historic period, for the old Roman highway runs directly through this alluvial basin, at intervals touching the windings along the left bank.

At the confluence of the Beja descending from the north, the Mejerda enters the series of narrow tortuous gorges by which it has forced its way through the surrounding chalk formation. But at the junction of the Zerga it encountered harder rocks, which it was unable to pierce. Hence it is here abruptly deflected southwards to its confluence with the Siliana, where it finds an easier outlet towards the north-east. Below the barrage constructed in 1622 by Dutch engineers the Mejerda flows by the west foot of the Jebel Ahmor to the alluvial plain through which it discharges into the shallow El-Bahira (Ghar-el-Melah) lagoon. This basin, which in the seventeenth century was "the finest harbour in Barbary," and which still communicates with the sea through a small channel accessible to fishing-smacks, has been gradually filled in by the alluvia of the Mejerda. Its depth, which now nowhere exceeds 5 or 6 feet, appears to have been diminished by 30 feet during the last hundred years. It will probably disappear altogether before the end of the century, just as the older Gulf of Utica in the same delta has been converted during the last one thousand six hundred years into the marshy depression of Mabtuha. The Er-Ruan sebkha and other lagoons in this district are also being slowly effaced, while the shore line between Cape Sidi Ali-el-Mekki and the hills of Carthage is continually advancing seawards. According to Tissot, the land has here encroached on the sea to a probable extent of 100 square miles in the course of the last two thousand one hundred years.

During the historic period the Mejerda has often shifted its bed, and by the aid of the old writers and a careful survey of its lower course, it might be possible to reconstruct the map of its delta at different epochs. In the time of the Carthaginians, the Makarath or Bagrada skirted the north foot of the Jebel Ahmor, leaving on the left a ridge of insular rocks from 100 to 150 feet high, and reaching the sea at a point just north of Cape Carthage. The old bed can still be traced by the sands and gravel, in which now grow a few oleander bushes. Subsequently two other beds were excavated farther north, both of which had also their origin in the gorge at the north foot of the Jebel Ahmor. But the present channel runs due north along the depression of the old Lake of Utica, terminating just south of the headland at the northern extremity of the Gulf of Tunis.

South of the Mejerda there are no permanent rivers, their mouths being closed by a bank of sand for at least several months in the year. But communication with the sea is effected by one lagoon, the Lake of Tunis, a second Bahira, similar to that into which the Mejerda falls; it is somewhat larger, however, and attains a greater depth, being some 6 feet in the deepest parts. Its approach is formed by an artificial canal, which has replaced a natural channel farther south, and which will admit vessels drawing over 4 feet of water; but its waters are rendered impure by the sewage of Tunis, and hence the banks are unhealthy. Like those of the Mejerda delta, this lake, which was formerly crowded by the Roman and

Carthaginian vessels, is losing in volume, and is bordered throughout its circumfer-

Fig. 33.—The Medjerda at Slouia, above Medjez-el-Bab.

ence by hollows, left by the receding waters, which have become swamps or sandy beaches. The Wed Melian, a term which probably conveys the sense of "Full

River," a name it no longer merits, is not a tributary of the Bahira; it descends from the Zaghwan mountains, and its volume, increased by the water at present collected by the aqueduct of Tunis, flows southwards round a low eminence which bounds the lacustrine depression.

### The Tunisian Sebkhas.

On the eastern shore of Tunis, the coast is skirted by numerous sebkhas, which are separated from the Mediterranean by strips of sand. But at some distance inland, depressions are also found into which fall several rivulets, whose waters quickly run dry in their saline clay beds. Such are the sebkhas which follow in succession west, south-west, and south of Sûsa, and which are alternately vast sheets of water and saline plains. During winter time Kairwan has often been completely cut off from the rest of Tunis by these quagmires. At the very commencement of the rainy season a large portion of the country is transformed into a veritable slough, leaving no other route available to the caravans except the ridges running between the hollows. The most extensive lagoon is the Sidi-el-Hani sebkha, or Lake of Kairwan, whose surface at the period of the floods is at least 200 square miles in extent, and whose central depression, in rainy years, always retains a little water. It is completely cut off from the coastlands by the Sahel hills, whilst Lake Kelbia, not so extensive but always filled with water and even bearing boats, occasionally discharges its surplus waters into the lowlands over a ledge some 60 feet high. When the rainfall is very abundant—that is to say, on an average every eight years—the emissary called the Wed Menfès attains a coastland lagoon, the sebkha of Jeriba, which is connected with the sea by the Halk-el-Mengel. Travelling at this part of the coast is rendered dangerous on account of the looseness of the soil, and till recently, before the construction of the causeway, not a winter passed without the caravans losing some of their men or animals.

According to MM. de Campou and Rouire, Lake Kelbia, whose surface varies from 20,000 to 32,000 acres according to the season, forms the basin of a fluvial system as vast and even more important than that of the Mejerda. The Wed Bagla, which flows into this basin together with its tributaries the Wed Fekka, the Marguelil, and other rivers flowing from the heights of Central Tunis, appears on the maps recently drawn up to have a far less extensive area of drainage than the northern rivers. In several essays M. Rouire has also attempted to prove the identity of the Bagla with the river Triton of the ancient writers. But how is it possible to identify with certainty a river which, according to Pliny, forms the source of the Nile, and one of whose branches is lost in the Niger? And the lake of the same name which M. Rouire identifies with Lake Kelbia, may in fact have been that mysterious basin which different writers have sought in various places along the southern shores of the Mediterranean, Strabo placing it at Berenice, to the west of the Great Syrtis, whilst Diodorus seeks it in the vicinity of the "ocean which surrounds the world." It would assurodly be a hopeless task to endeavour to reconcile all the assertions that ancient writers have made about the

river and Lake Triton, more especially as not one of their statements harmonises with the present conditions. All the proposed identifications are contradicted by one or another passage of these authors, and beyond doubt numerous changes have taken place in the physical geography of the country, effacing many a topographical detail now vainly sought by the commentators. It suffices to say that, although unacceptable on other heads, M. Rouire's hypothesis concerning the identity of the Wed Bagla with the river Triton, is at least so far in accordance with the writings of Ptolemy, that this watercourse really rises in the ravines of Mount Ussalet, the Ussaloton of the Alexandrine geographers. Moreover, throughout the whole eastern shore of Tunis, the Bagla is the only wed which, rising at some distance inland, flows on in a perceptible bed, if not as far as the Lesser Syrtis, at least, according to M. Rouire, as far as "a little Syrtis," to which it brings a small quantity of water. Lake Kelbia, on the other hand, is, in circumference, almost exactly the thousand stadia (111 miles) which Scylax assigned to Lake Triton. At the same time, the extent of this lake would seem to be much too great, if the statement of Herodotus is true, that the Libyan virgins, after having engaged in a combat in honour of Athene, "bore the most valiant round the marsh." The prolonged cry which the women uttered at the feasts of the goddess is synonymous with the *zagrit*, *tulul*, or *yu-yu*, which the Libyan women of all the modern Berber tribes give vent to, tapping their lips to give effect to the sound, on such occasions as feasts, weddings, funeral processions, and warlike expeditions.

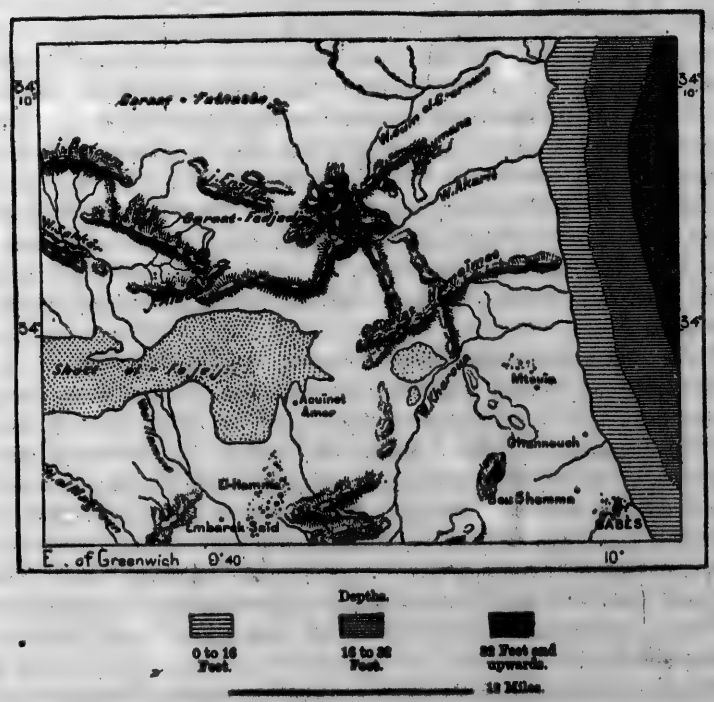
To the north-west of Sfakes, another depression contains the saline lake called Mta-el-Grarra; and farther south, near the regular curve described by the Gulf of Cabes, there is still another depression, filled with water or a saline efflorescence, called the Mansuna, or Sebkha-en-Nuail. But these survivals of former lakes are a mere nothing in comparison with the partially inundated plain which forms the natural boundary between the "Isle of Maghreb" and the Sahara. For over a space of 240 miles from east to west, a succession of sheets of water, saline basins, marshes, and hollows filled with clay, stretch south of Tunis and Eastern Algeria. It is probable in some part of this depression, so remarkable in all respects, that most ancient geographers located the sacred waters near which Minerva and Bacchus were born.

Shaw, towards the end of the eighteenth century, was the first to put forward the hypothesis that Lake Triton was identical with one of the Tunisian sebkhas. As a zone separating two natural regions, two faunas, and two races, and from a hydrographical point of view appealing to the imagination both by its vast size and by its divers phenomena, this region ought to prove of much greater interest to geographers than the little lake on the eastern coast, north of the islands. The vast basin of the Igharghar, whose waters formerly flowed into the chain of "Tritonic" lakes, presents a surface of at least 320,000 miles, forty times superior to that of the Tunisian weds which run into Lake Kelbia. This basin, however, has been completely separated from the Mediterranean for a period long antecedent to all historic records.

Judging from the fossil shells, the marine inlet or the fluvial bed between the Mediterranean and the lacustrine basin of the Sahara, was definitely closed about the postpliocene period. Nevertheless, the riverain peoples of the shott, struck by the aspect of dried-up inlets presented by these basins, persistently maintained that communication formerly existed between the sea and the sebkhas, but that Alexander the "two horned" closed the outlet by his enchantments.

Before the geographical exploration of the country, the Isthmus of Cabes, between the sebkhas and the sea, was merely considered as one of those sandy

Fig. 34.—Sill of Cabes.
Scale: 1,500,000.




beaches such as are found on every shore before the mouths of rivers whose current, even when aided by the ebb and flow of the tides, is not sufficiently strong to clear a passage seawards.

It was supposed that sandhills had gradually raised the bar, which had itself probably been elevated above the sea-level by the effect of some inland disturbance. M. Fuchs, by measuring the height of the sill with a barometer, at last discovered the true state of the case.

From a mean elevation of 330 feet, the little chain of hills revealed two breaches from 190 to 200 feet high, whose geological formation he ascertained to

consist of eocene sandstone and chalk. The Italian expedition under Antinori, which visited the shores of the Gulf of Cabes in 1875, also found that the sill was partially composed of rocky layers, and not merely of sand heaped up by the winds. The lowest point found by the expedition on the waterparting between the streams which run to the sea and those which flow westwards towards the sebkha, is over 170 feet above the sea-level. Since then, Roudaire, a French officer, has carefully prepared a detailed map of the whole region comprised between the Gulf of Cabes and the Algerian "shotts," and has definitely cleared up all uncertainties. The bar of Cabes still offers at its lowest elevation a height of over 150 feet; the sebkhas, which it separates from the Mediterranean, are themselves situated at a height of from 50 to 80 feet above the sea-level, and terminate westwards at another ridge more than 300 feet high. Beyond this point begin the depressions lying below the level of the Mediterranean. The total breadth of land required

Fig. 35.—Zone of the Shotts South of East Algeria and Tunis.

Scale 1 : 3,000,000.

Region below the level of the sea.

60 Miles.

to be excavated in order to connect the basin of the "shotts" with the Mediterranean would be over 100 miles.

The whole system of shotts and wadies—or, retaining the Arabic form, shtuts and widans—which may be called the "Tritonic" system, according to the hypotheses of most archæologists, was at one time probably a fluvial basin commencing at the source of the Igharghar. But this hydrographic system has long been broken up. The river bed is in many places blocked by dunes, and the secondary depressions have been separated from it by ridges of upheaved rocks. That of the east especially, the largest of all, is bounded by hilly ridges which effect a junction with the southern Tunisian chains. From the ridge of Cabes to that of Kriz follow in succession north of the basin a series of abrupt cliffs, called the "Lips" (Esh-Sherb), as if the plain of the ancient lake was compared to an immense mouth. The sebkha, known at its east end by the name of Shott-el-Fejej, at first is narrow, but gradually broadens out westwards; then, beyond a promontory on the southern

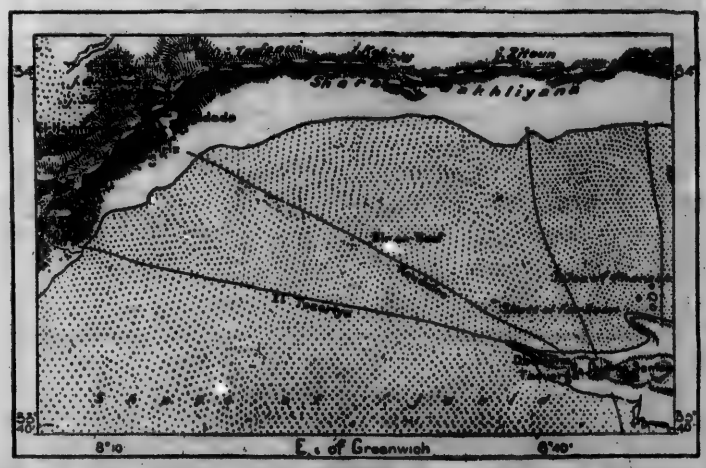
bank, a long rock continued by dunes, the basin, here called Shott Faraun, suddenly becomes three times larger, and forms the Shott-el-Jerid, or "the Shott of the Palms."

At its western extremity this huge lacustrine plain is called by various other names. It is no less than 120 miles long from east to west, with a breadth, from north to south, at the widest part, of 45 miles. The riverain people say that water remains permanently only in the central part of the Shott-el-Jerid; but this water is not visible, being hidden by a saline crust, which suggested to the Arab authors its comparisons to a silver leaf, a crystal sheet, a bed of camphor. On it the footsteps re-echo as on the stones of an archway.

Besides the deep waters of the lake properly so called, which is concealed under its saline covering, the lowest parts of the lacustrine depression are usually filled

Fig. 36.—Tracks of Travellers in the Shott-el-Jerid.

Scale 1 : 650,000.




with water, at times of sufficient depth to reach the girths of horses crossing the sebkha, and which under the influence of the wind is displaced from side to side of the depression. When the water is driven on to the saline crust over the hidden springs, it becomes partially dissolved, and the level of the waters of the shott thus often becomes changed. It occasionally happens that the crust of salt is forced upwards by the pressure of the water, or of the inflated gases, into the shape of a cone, just as if a subaqueous volcano had sprung into existence. Thus are formed islands which, thanks to the mirage, when seen from afar appear like veritable hills, and, indeed, are so called by the riverain peoples.

One of the largest of these islands, called Jebel-el-Melah, or "Mountain of Salt," is scarcely twenty paces in diameter and rises no more than about 3 feet above

the level of the sebkha. In the middle of this flat space is an ancient well, now filled up, which has procured for the islet the further title of Bir-en-Nsof, or "the Central Wells." Numerous springs rise in the hard tracts of land found in many parts of the sebkha, but the water they yield is as brackish as that of the fountains in the surrounding oases. Four islets lying near the southern bank of the Shott Faraun, are collectively termed Nkhâl Faraun, or "Pharaoh's Palms," thanks to a legendary report of the passage of an Egyptian army through this lacustrine basin, which the local traditions confound more or less with the Red Sea. The palms found on these four islets are said to have been planted by Pharaoh himself, in place of the olive-trees which previously covered the now inundated plain. These palms belong to none of the varieties known in the Jerid, and the dates they yield never attain a complete state of maturity.

The great Tunisian sebkha is crossed by numerous caravan routes, which connect the oases on both sides of the basin. Tissot enumerates nine of these routes, but there are others not so well known, more especially in the eastern portion of the basin, which is hence called Shott-el-Fejej, or "the Routes," on account of the roads which traverse it. Some of these tracks are perfectly free from danger, whilst others must be crossed with the utmost caution, owing to the fissures, in which the wayfarer might suddenly disappear. On commencing the transit, the guide always admonishes the travellers to follow carefully in his footsteps, so as to avoid this danger. The sebkha of Tunis is much more inclined than the Runn of British India, presenting a slope of from 30 to 36 feet from east to west, whilst it is also much more perilous to traverse. A cloud of dust, or a mirage which hides or distorts the landmarks, a mistake on the part of the guide, or a stampede of the pack animals, might hurl the caravan into the midst of certain death. By certain traditional agreements amongst the tribes, the course to be followed should be indicated by stones on one side and trunks of palm-trees on the other, a space of a few hundred yards intervening between these landmarks. This arrangement, however, is not observed with sufficient attention; most of the *gasâirs*, or guiding marks, are no longer in their proper place, or else have been replaced by the remains of camels. The sides of the road connecting the oasis of Kris with those of the southern promontory, are bordered by abysses filled with a greenish-coloured water, "more bitter than that of the ocean," and of such a vast depth that the bottom has never been reached by the sounding lines. According to the ancient Arab stories and traditions, the earth has often given way under the weight of the caravans, and the men and animals composing it have been swallowed up by these abysses, whose mouth has immediately closed over the heads of its victims. South of the lake, in the neighbouring region of Nefsawa, in which numerous hot springs take their source, there is another natural well of unknown depth, which is called by the Berber name of Tawerga, and of which the tribes in the vicinity say, that it demands an annual sacrifice of a human being. According to a local tradition, several centuries ago the site of this abyss was displaced by a violent earthquake.

North-west of the great Tunisian sebkha, the cliffs of the "Lips" are continued

by an irregular escarpment, which at one point forms a hill some 570 feet high, before losing itself in the sands in almost imperceptible undulations. This chain, whose depressions contain the pleasant oases of Jerid, forms a barrier separating the Shott-el-Jerid from the Shott Gharsa, a basin similar to the eastern sebkha, but of much less extent. The Shott Gharsa, shaped like a crescent with its convex side facing northwards, is much lower than the Shott-el-Jerid. It lies entirely below the level of the sea, and if ever a canal should be opened to establish communications between this depression and the Mediterranean, its banks would be under water for some 6 miles beyond the present water-mark. The western extremity of the Shott Gharsa penetrates into Algerian territory and stretches on like a huge arm of the sea in front of a labyrinth of much more extensive shotts, known collectively as Melghigh (Melri'ir). The two basins are separated from each other by low-lying ridges and intermediary depressions. According to the project with which the name of Roudaires is connected, it was the Shott Melghigh which, together with all the adjacent land, was destined to form to the south of Algeria that "inland sea" which, in the imagination of its projectors, was one day to revolutionise the climate of the neighbouring countries, to attract moisture-bearing clouds to the Aurès Mountains, to increase the amount of rainfall, to fill permanently the, at present, dried-up beds of the watercourses, and to bring forth from the soil springs which had long ceased to exist. But although it may be difficult to imagine the formation of a navigable course leading from the ridges of Cabes to the oases of the Algerian desert, it may at least be understood how useful it would be to restore the ancient route which skirted the southern face of the island of Maghreb, between the Lesser Syrtis and the valley of the Draa.

Like those of the eastern coast of Tunis, properly so called, the weds of the Tunisian Sahara are almost always without water. The most important in volume, if not in the length of their course, are the Wed Akarit, Wed Melah, and Wed Cabes. The Wed Cabes is hardly 6 miles long, although at high water coasting vessels can sail up it as far as the oasis of the town. The hypothesis has been put forward that the shallow current of the Akarit or Cabes is identical with the "river Triton" of the ancients; nor is this supposition altogether improbable, especially as the Libyans, as is proved by the legendary hydrography of Africa, readily believe in the existence of subterranean rivers in the region of the sands. Besides, it is an indisputable fact that the basin which receives the Akarit and Cabes is of considerable extent above the springs where the water wells up very copiously. Hence it may be questioned whether some fissure in the rock may not afford an outlet, through the streams flowing to the Mediterranean, to the deep waters concealed beneath the saline crust of the Shott-el-Fejej.

### The Tunisian Coast and Islands.

Although the mountains which continue the Tripolitan "Jebel" approach the coast in southern Tunis, sufficient space has still been left for the formation of sebkhas, amongst others the Sebkha-el-Melah, or "Salt Lagoon," the Bû-Guerara,

and the Bahiret-el-Bibân, or "Lake of the Gates." This latter coastland swamp, perfectly similar in formation to those found in Languedoc, is separated from the sea by a narrow strip of land known as "The Dog's Nose." In the narrowest portion of this strip of land are two inlets, one of which is so deep that horses are obliged to swim through it.

An islet at this point of the coast, lying between the two channels, is occupied by the fortress of Bibân, or "the Gates," so called on account of the marine passages which it protects, and also because it guards the approach to Tunis from the Tripolitan frontier.

This portion of the coast seems to have been greatly modified within historic times. Edrisi places at about a mile from the beach of the Bibân fortress an island called Ziru, which is no longer in existence, unless, as many writers believe, it has become merged in the strip of land between the sea and the lake. But in this case it would have changed its shape, and the sea would have gradually eaten it away, for in the time of Edrisi, in the twelfth century, it was covered with villages surrounded by vines and palm groves. Forty miles long by half a mile broad, this island must in any case have been a sandy tongue of land which has effected a junction with the coast. The site of this vanished land is probably marked by the reefs and sandbank of Zera. At this point a piece of land still stood high and dry in the sixteenth century, and here was assembled the fleet of the Duke of Medina-Coelis, when on an expedition against Jerba island in the year 1560.

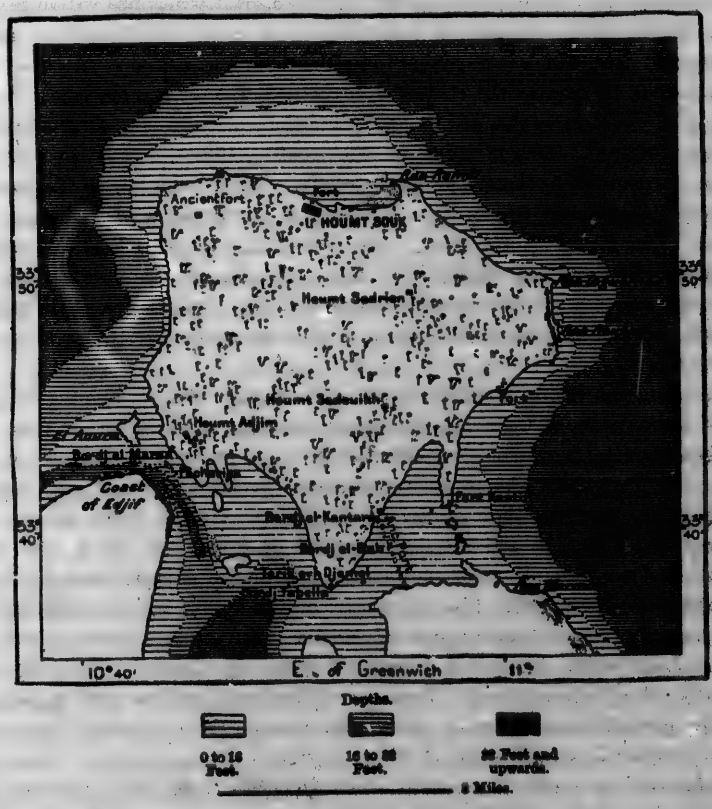
The islands of Southern Tunis are not of independent origin, like the volcanic cliff of Pantellaria, off Cape Bon, but are merely fragments detached from the neighbouring coast by the erosive action of the water or by the subsidence of the land. The Kerkennah islands, the Cercina and Cercinitis of Strabo, which form off Sfakes the northern limit of the Syrtis Minor, or Gulf of Cabes, present the appearance of a mass of soil incessantly eroded by the waves. It is even very probable that the archipelago of the two islands and the adjacent reefs has been gradually diminished within historic times. Scylax speaks of but one island, of which the two present islands are probably no more than a mere fragment; and the measurements which Pliny and Herodotus assign to Cercina (Cyraunis) and Cercinitis are no longer correct. They have diminished, and the northern portion has been partially demolished by the waves, although the strait which separates the two islands has scarcely changed for the last two thousand years. There are still to be seen the ruins of a causeway, some 4,000 feet long, which connected the two banks, and which might be easily rebuilt.

At the southern extremity of the Gulf of Cabes, the large island of Jerba, the Meninx of the ancients, which tradition points out as "the land of the Lotophagi," has apparently better preserved the shape it had at the beginning of historical times. However, it is scarcely separated from the mainland, from which it can be easily reached by fording the intervening channel. The island terminates southwards in two points towards which are directed two promontories from the mainland, and on both sides the coast has been eroded between these capes in such

a manner as to form a kind of lake, very similar in appearance to two neighbouring lakes, the Sebkha-el-Melah and the Bahiret-el-Bibân. According to Wood, this marine lake is the river Triton, so long sought for on the neighbouring coasts. The western branch of the strait, some 8,330 feet broad, and commanded by lofty hills and cliffs, is the only one which is navigable for shipping, the passage excavated by the action of the tides being from 10 to 50 feet deep. The eastern branch, although broader, is partly obstructed by islets, reefs, sandbanks, and at

Fig. 37.—Island of Jerba.

Scale 1 : 110,000.




ebb there remains scarcely 2 feet of water in the deepest parts. The ford followed by the caravans, which bears the name of Trik-esh-Jemel, or "Road of the Camels," winds to the west of a Roman bridge spoken of by ancient travellers, and of which some remains are still to be seen. Two castles, the Borj-el-Kantara, or "Castle of the Bridge," on the shore of the island, and the Borj-el-Bab, or "Castle of the Gate," in the very centre of the strait, recall the ancient viaduct, worthy of being compared to the works of modern engineers, if not for boldness of design, at least

for its great length. Another insular castle protects the Camel Road. According to the statement of an ancient traveller, the eastern channel of the strait was navigable during the Carthaginian period. Viewed from a distance, Jerba Island seems to continue the mainland into the sea in the shape of a long flat point covered with palms and skirted with strong castles, formerly raised against the Spaniards or the Knights of Malta. The highest elevations of the land, towards the centre of the island, are but a few feet above sea-level. No rivulets wind through the plains of Jerba, and the natives have no other water than that of their wells. Nevertheless the whole island is densely wooded, and the olive here attains a size unknown even in the Sahel.

## The Syrtes.

The Gulf of Cabes, which extends in a semicircular shape between the Kerkennah group and the island of the Lotophagi, was as much dreaded by the ancients as the Greater Syrtis itself. As long as the Carthaginians monopolised the trade carried on along the shores of the Lesser Syrtis, they were careful to describe the navigation of these coasts as highly dangerous, so as to scare away sailors of other nations; and those foreigners who were the first to venture into these unknown regions might well have supposed at first that the jealous Carthaginians had not deceived them, when they were surprised by the treacherous tides which distinguish the Lesser Syrtis from all the other seas of the Mediterranean basin. The first Roman fleet which penetrated into this gulf, more than one hundred and twenty centuries ago, ran aground in the shallows at low water, and when floated by the incoming tide, the sailors had already lightened the vessels by heaving the provisions and merchandise overboard, and being thus deprived of their supplies, they were compelled at once to return to Sicily.

Opposite the mouth of the Wed Cabes, at the extreme end of the Syrtis Minor, the water alternately rises and falls over 6 feet, while on the shores of Jerba Island the average swell of the tide is not less than 10 feet. In the port of Sfakes, at the other extremity of the gulf, the average rise of the tide is nearly 5 feet, but at the period of the equinoxes the difference between ebb and flow is a little over 8 feet. The phenomenon of such considerable tides at this spot is accounted for by the funnel-like shape of the gulf and by the gradual slope of its bed. The liquid volume coming from the open sea collects in the Syrtis Minor much more readily than in the almost landlocked seas, such as the Adriatic, or in more open bays, such as the Syrtis Major. But the tides of Cabes being now thoroughly understood, are divested of their terrors, and vessels of small tonnage visit these shores without encountering any of the dangers which were formerly so greatly dreaded. Armed with sounding lines, the coasting vessels which cross the gulf sail cautiously along, the sailors standing by the anchor, ready to let go the moment the lead indicates that there is not a sufficiency of water under the keel. And even in case of shipwreck, there is very little danger to be run, the sea for a distance of 6 miles out being so low that the crew could easily make to shore. The waves on this coast never attain a very great height. On the vast banks of soft mud which surround

the Kerkennah Islands, the surface of the water calms down, let the winds rage ever so furiously on the open sea; hence in these still waters vessels can find a sure haven of refuge, even in the roughest weather. The Syrtis Minor is known to Italian sailors as the *mare morto*, or Dead Sea, in contrast to the deep waters of the *mare vivo*, or open sea.

The great changes which have taken place in the contour of the islands and continental coastline of Tunis have, by some travellers, been attributed to local oscillations. Like those of Tripoli, the beaches of Jerba and Kerkennah are said to have sunk and consequently diminished in extent. Grenville Temple endeavours to prove that within the historical period the Kuriatein Islands still formed a portion of the coast between Monastir and Cape Dimas. On the other hand, according to Roudaire and the geologists attached to his expedition, the plateau of Cabes was produced by some internal disturbance, which at the same time upheaved the Shott-el-Jerid above the level of the sea, and changed its slope from facing eastwards to westwards. The coast of Tunis does undoubtedly show in many places above the sea-level traces of ancient beaches that may still be easily recognised. Thus, throughout the plateau of Cabes and along all the windings of the coastline as far as Sfakes, as well as on the other side of the headlands on the Sûsa coast, Fuchs discovered, in 1874, a sandy beach, now lying at a uniform height of from 40 to 50 feet above the sea, although it contains organisms which are still existing in the Mediterranean.

But although the existence of these elevated beaches is a sufficient proof that a change has taken place in the relative heights of the land and sea, it in no way shows that the subterranean impulse is still active, as many travellers believe themselves justified in stating. The silting up of the ports of Malidiya, Carthage, Utica, and Porto-Farina is quoted as a proof of the upheaval of the coast, whereas, in all these instances, the change may be accounted for by the depositing of marine sands or of alluvia brought down by the rivers. Besides, we must not lose sight of the fact that a port which afforded access to the galleys of the ancients, thanks to their slight draught of about 4 feet, would now be inaccessible to an ordinary vessel, even were it not choked by sand. Nowhere along the Tunisian coast has there been found any inland building showing traces of having at any time been washed by the waves. On the other hand, several islets and reefs mentioned by the Greek, Roman, and Arab geographers still remain almost flush with the water, as in former times. The ports of Carthage, which Beulé has had cleared of sand down to the sea-level, have been found precisely at the same level at which they stood some two thousand years ago.

### Climate of Tunis.

The situation of Tunisia, at the eastern angle of the island of Maghreb, between the two basins of the Mediterranean, and at one of the approaches to the Sahara, gives two special characteristics to the climate of this country. Washed by the sea on the east and south-east as well as on the north and north-west, Tunis naturally

enjoys a much more equable climate than Algeria. Being, moreover, destitute of lofty mountains or extensive plateaux, whilst its upland regions terminate in wide valleys well exposed to the sea breeze, the temperature far inland is much milder than that of the central regions of the Maghreb. As yet no exact meteorological observations have been made for the inland regions of Tunis. Nevertheless, from the nature of the vegetation it is easy to determine the general characteristics of the climate, and observe the contrasts that it presents with that of the conterminous regions. Thus it is that the east winds, which are hot and dry in the Algerian portion of the Sahara, carry a certain quantity of moisture into the Tunisian part of this desert, and nourish plants which are never found in the western solitudes. Although on the average higher than that of Algeria, the temperature of Tunis is at the same time moister and less variable.

Nevertheless, the northern and coastland regions are more exposed to the scorching southern winds than the Algerian Tell, and it occasionally happens that, under the fiery breath of the simoom, the thermometer rises to 113° and even to 118° F. in the streets of Tunis. On the other hand, the atmospheric currents which in winter bring down the cold air from the Apennines, have occasionally produced weather as cold as any experienced in Southern Europe. Ferrini states that in the month of February, 1854, snow fell in Tunis for the space of one whole day.

The seasons in Tunis succeed each other with extreme regularity. The winter, which coincides with the rainy season, and which bears the same name of *esh-shta*, usually commences in January and lasts not quite two months. This is followed by the "green" or spring season, which is also very short, whilst the summer lasts six months, from May to October. The autumn is ushered in by the normal return of the rains, although showers are common throughout the whole year; on an average the Tunisians calculate that rain falls on 90 days out of the 365. The winds usually blow from off the sea, *i.e.* from the north-east to the north-west. The north-east current, which is the normal polar wind, usually prevails during the summer months; whilst the north-west wind, a continuation of the beneficent "mistral," predominates for the rest of the year. These sea breezes are the most salubrious, and are those which are accompanied by rain; but they are not so regular as the trade winds, and are often subject to sudden changes. At the period of the equinoxes, violent atmospherical disturbances often arise; towards the middle of September the Gulf of Tunis is almost always thrown into a commotion by a violent gust, which the Christians of the first centuries called "the Cyprian wind," because it generally appeared on the anniversary of the death of Cyprian, bishop of Carthage. The full fury of the winds is usually most to be dreaded around Cape Bon; several aërial currents meet at this angle of the continent and struggle furiously for the supremacy. Hence the name of "Bon" or "good," which the Carthaginians gave this promontory, with the intention of flattering the genius of the cape, and thus securing his goodwill. The Arabs often call it Râs Ghaddâr, or "the Treacherous Promontory," instead of Râs Addâr, or "the Good Cape." The marine currents also meet at the base of this cape, and form as violent a disturbance below as the winds cause above. So power-

ful and so lashed by the winds are the currents of water running from the western waters into the sea of the Syrtes, that vessels sailing westwards would be unable to cross it were it not for the south-east winds, which usually blow off the Syrtes towards Malta, and thus assist them to double this dreaded headland. When the

Fig. 38.—Cape Bon and Zembra Islands.

Scale 1 : 840,000.

sky is unobscured by clouds, a view can occasionally be obtained from this promontory of the coast of Sicily, and the horizon has often been seen illumined by a ruddy light caused by the eruptions of Mount Etna.

It is somewhat remarkable that on the coast of Tunis tempests are rarely

accompanied by lightning. Thunder is scarcely ever heard, except on the mountains, and Ferrini assures us that there is not a single instance on record of its having been met with in the plains. At Tunis and in the suburbs it has been thought unnecessary to protect the buildings by lightning conductors. At Sfakes, however, the case is quite otherwise, and M. Guérin states that a tower in this town was several times struck by lightning in 1882.

Taken altogether, the climate of Tunis is one of the finest throughout the whole Mediterranean coastline. The military statistics between the months of August, 1883, and March, 1884, show that fewer soldiers were received into the Tunisian hospitals during that period than in any of the Algerian provinces, or even than in France itself. M. Bertholon considers that the coast of Tunis can boast of as fine a climate as Australia, but that in the inland valleys, where the atmosphere is not renewed by the north winds, endemic fevers are justly dreaded.

## Flora of Tunis.

Belonging to the Mediterranean zone by the nature of its geological formations, rocks, and climate, Tunis is also comprised in the same geographical area, thanks to its flora and fauna. Like Algeria, the Iberian coast, Lower Languedoc, and Lower Provence, Italy, and Greece, Tunis forms a part of the olive region, which Columella considers to be "the first of all trees." The investigations of botanists show that the Flora of Tunis is almost identical in its special characteristics with that of Algeria; still, the differences in the relief of the land and the climate have resulted in a far greater intermingling of species in the eastern than in the western region. In Algeria the boundary lines are clearly defined between the flora of the coast and of the uplands of the plateaux, and of the Sahara, whereas in Tunis they intermingle in the utmost disorder. The species common to the Sahara, following the coastline along the Gulfs of Cabes and Hammamat, finally reach the maritime dunes close to Tunis and Bizerta. Wherever sand is to be found, the botanist is sure to observe ten or twelve varieties which he has seen in the Saharian *ergs*. Conspicuous amongst these is the *drin*, or *arthraterum pungens*. On the other hand, there are found south of the Shott-el-Jerid, in the same latitude as the southernmost oasis of the Algerian Suf, some plants belonging to the upland plateaux of Sétif.

Cabes seems to form the meeting-point of the most diverse floras, comprising varieties from the sea-shore, from the sandhills of the desert, from the clayey beds of the weds and their alluvia, from the argilo-calcareous plain, which skirts the foot of the mountains, and from those oases characterised by a Mediterranean and almost a European flora. Thanks to its position opposite Sicily, Tunis also possesses a certain number of species common to Sicily and Italy, which are nowhere found in Algeria.

Cape Bon, the boundary of the eastern and western basins of the Mediterranean, also forms a barrier between two regions whose respective floras present some points of difference in detail. The entire flora of Tunis, which Desfontaines in

the last century calculated at 300 species, consists, according to M. Cosson, of 1,780 varieties, of which a few only are indigenous. From west to east, *i.e.* from Tunis to Marocco, the special varieties of plants gradually diminish, a fact due to the gradual lowering of the land. Amongst the 563 species found at Cabes, there are only 25 which are not to be met with in the Algerian Sahara. Some of these plants are so numerous that they impart their colour to the plains, which hence are visible for a distance of several miles. Large tracts covered with bind-weed, and other pale blue flowers, appear in the distance like extensive lacustrine basins.

The mountains of the Mejerda basin, and those which command the Mediterranean watershed between Bizerta and Calle, are still covered with vast forests. Thanks to the relative moisture of the climate, here are found huge oaks, amongst others the *zeen* (*quercus Mirbeckii*), whilst the holly flourishes in the midst of the brushwood, and the wild cherry amongst the fruit-trees. If the Mejerda has plenty of water throughout the year, it is due to the woods which clothe its sides. But in central Tunis, and in the vicinity of the Syrtes waters, the country is almost entirely deforested. The only trees to be found in this region are the olive and the fig, which grow round the towns, overtopping the hedges of nopal, as in Algeria, the plateaux having no other varieties than the wormwood and alfa grass, which is used to manufacture paper. In some spots the ground is completely naked, and has even lost its superficial humus, the hard rock ringing with a metallic sound under the foot of the traveller. However, in these barren regions, at the southern base of the Bu-Hedma mountains, there lies a forest of gum-bearing acacias, which covers a space of some 18 miles long by 7 broad. This is the most northern region of Africa in which is met one species of these gum-bearing trees, viz., the *acacia sayal*. But they scarcely amount in round numbers to 40,000, the trees being so far distant from each other. They are occasionally used in the preparation of food, but the gum is allowed to run waste, and serves as food to wild animals. The gum which exudes from certain varieties of mastics, as in the island of Chio, is not employed in the manufacture of mastic or other perfumed essences.

The banks of the great shotts, which are separated from the Syrtis Minor only by a narrow isthmus, are covered with the beautiful "groves," as the natives call them, of the Beled-el-Jerid, or "Country of Dates," which contain over a million palms, belonging to more than 150 varieties. The dates vary in taste in a most astonishing manner, according to the climatic conditions. Whilst the palms at Sfakes and Jerba island are little more than ornamental trees, whose fruit is mostly given as food to the animals, those at Cabes produce excellent dates; the fruit yielded by the El-Hamma oasis is excellent, while that obtained in Jerid and Suf is even still better. The cause of this is doubtless due not so much to the difference of temperature, as to the different proportion of the atmospheric moisture. Amongst all the varieties of dates, a great difference in taste is noticeable according to where they are grown. In the Jerid the finest is the *deglet-nur* or "luminous date," so called on account of its transparent appearance; the Suf, however, can show dates which are preferable to it. The inhabitants of the oases love their

trees as if they were domestic friends. They never "kill," *i.e.*, cut down, a palm for the purpose of making *lakbi*, the caryptis of the ancients, except on very important occasions, such as the birth of a child, a marriage feast, or on the arrival of a greatly respected guest.

Formerly Jerba, the ancient Meninx, the "Island of the Lotus-eaters," was famous for the lotus plant, which is not known with certainty to have ever since been found in this region. What was this fruit, of such an exquisite taste that when travellers had eaten of it they forgot their native land? Does this Homeric legend refer to some mysterious product symbolical of peace and happiness? or else does it apply to a veritable fruit which seemed so attractive to the Greek mariners? The descriptions given by the ancient writers seem more especially to indicate a variety of the jujube-tree (*zizyphus lotus*), the *seder* or *sidra*, which is still found in Jerba Island, as well as on the neighbouring coast, and as far inland as the Tuareg country. Its berries are made into a very pleasant acidulated drink, although the fruit itself, of an insipid sweetish taste, is no longer much appreciated. Mohammed speaks of the zizyphus lotus as an accursed shrub, which in the Saba country has taken the place of the delicious fruit-trees which formerly flourished in the gardens of that region. The first Greek explorers, who related to their countrymen the wonders of the distant lands they had visited, may possibly have tasted the fine dates of Beled-el-Jerid, without having seen the tree, and hence they would have attributed this fruit to the jujube-tree; or else the taste of the fruit may have been modified, of which Egypt presents an example in the fruit of the sycamore. El-Bekri relates that the apple-trees of Jerba were unrivalled for the excellent and beautiful fruit they bore; but its plantations were destroyed because the Christians used to take the apples without paying the islanders for them.

## Fauna of Tunis.

The fauna of Tunis, like its flora, differs from that of Algeria and Tripoli in but few varieties, being somewhat richer in animal forms than the neighbouring desert lands which skirt the Syrtis Major, and not quite so rich as Western Mauritania. A gradual increase in the number of species takes place in the direction from east to west. But in Tunis, as in the conterminous regions, the fauna has been considerably modified by the great changes which have taken place in historical times. The destruction of the forests has caused certain species of animals to disappear, or else has reduced the extent of the zone inhabited by them. On the other hand, domestic animals have been imported, and also probably wild animals, such as deer, for according to the ancient writers, these animals were not to be found in this region before the arrival of the Carthaginians, who introduced and kept them in a half domesticated state to offer them up as sacrifices to Baal-Hammon. At present a few deer are to be seen in the western uplands of Tunisia, notably south of Tabarka, in the Khumir and Ushtetta hills.

The bear, which is believed to have been very common, judging from the numerous geographical terms in which its name occurs, appears to have become

extinct about the beginning of this century. The baboon is no longer to be met with, except in that angle of Tunisia bordering on the southern shotts. Lions still exist in some of the hills on the frontier of Algeria, and more especially in Khumiria, amongst the Ushtetta tribes, and in the Jebel-Bû-Ghanem. But they are not nearly so numerous as they were in the time of the Carthaginians, when they preyed upon peasants and travellers in the very outskirts of the towns, and when the roads were lined with gibbets on which these animals were crucified. According to a popular legend, the Bû-Ghanem territory still contained a few thousands of these ferocious beasts some few centuries ago, and the reigning sovereign gave the country to a certain tribe on the condition that they ate no other flesh than that of the lion.

Elephants have disappeared with the forests which they devastated, but it is satisfactorily shown that they existed in this country in the early period of local history; they were probably exterminated during the Roman sway. In Pliny's time elephants were already brought in captivity "from beyond the solitudes of the Syrtes;" but a Spanish writer states, on mere hearsay authority, that this pachyderm was seen in Tunis as late as the latter end of the sixteenth century. More fortunate than the elephant, the buffalo has not been completely exterminated, a few herds still roaming round Lake Biserta, and even in the island of Eshkel, in the middle of the lake of the same name; but they are no longer found in any other part of the country. A few mouflons still survive in the southern hills of Tunis, but in no other part of the country. But, as in the rest of North-west Africa, the domestic fauna has been enriched by the acquisition of that most valuable animal, the camel. According to Tissot, this animal has for at least fifteen centuries been indispensable as a beast of burden to the inhabitants of the Barbary States and Sudan.

The reader is doubtless familiar with the accounts of the ancient authors concerning the struggle which the army of Regulus had to sustain on the borders of Bagrada against a serpent more than 116 feet long. But at the present day throughout the whole of Tunis there is not a snake which attains one-fifth of these proportions. The varieties of the ophidian family have also decreased in number, although there are probably still many species as yet undiscovered; while, on the other hand, many of the reptiles which the ancient writers describe as sprung from the blood of the Gorgon, must be classed amongst the fabulous animals. One of the districts most infested by serpents is the mountain region which skirts the Tunisian Sahara; the natives have even been compelled to quit the Jebel Telja, north-east of the Shott-el-Gharsa, on account of the multitude of snakes, of the *tagarga* family, which swarm in this place. Farther east, towards Sfakes, the nomads of the steppes have a great dread of the *sorreig* (*cohis carinata*), which twines itself round the branches of the tamarisk-trees growing near the springs, and thence darts down upon its prey. It is probably the same species as the *jaculus*, or "winged serpent," of the Latin authors. A recent expedition, under the direction of M. Doûmet Adanson, has resulted in the discovery of a "hooded" snake, called *bû f'tira*, the *naja* of naturalists. The scorpion, another reptile common in Tunis, is extremely dangerous, much more so than the Algerian or Morocco

varieties. Its sting often proves fatal. According to the natives, a peculiar kind of fossiliferous sandstone placed at the threshold suffices to prevent scorpions from getting into the houses; they are said never to be found in the El-Jem amphitheatre, which is built with these stones. Clouds of locusts visit the Tunisian Tell, and destroy the harvest; those which devastated Algeria in 1845 were hatched, according to the statement of Pellissier, near the Tunisian Jerid. Butterflies are extremely rare in Tunis; the chief charm of our fields is denied to those of Northern Africa, but a few of these graceful insects are to be seen hovering over the flowery slopes of the mountains. This scarcity of lepidoptera is due to the great numbers of birds, which destroy the caterpillars.

Tunis possesses a few special varieties of birds, amongst others a sparrow from the Jerid, called the bû-habîbi, or "father of friendship," which flies from palm to palm uttering a shrill note like that of the canary. This elegant bird, celebrated in all the songs of the country, is looked upon as a sort of good genius, and the natives protect it zealously against foreign sportsmen; but all attempts to introduce it into the town of Tunis have hitherto failed. The salt lakes are covered with blue and pink-coloured flamingoes, which, from a distance, look like soldiers clad in bright uniforms. Above the fields wheel flocks of starlings, at times dense enough to cloud the skies.

The seas which bathe the shores of Tunis swarm with fish. Around Jerba and Kerkenna Archipelago, which even ancient writings describe as "environed by ...kes," the shallow water is divided into irregular compartments formed of palms which rise and fall with the tide, and which enclose channels and chambers into which the fish swim at high water, but from which they are unable to extricate themselves at low water. The islanders are thus enabled to capture a great quantity of fish, which they cure and export to the towns on the neighbouring coast, and even to Italy. The cuttle-fish, which are obtained chiefly on a bank situated between Sfakes and the islands, are dried in the sun and nearly all exported to Greece. The Jerba and Kerkenna islanders also fish for sponges, either in winter by means of long hooked poles which they drag over the rocks, or in summer by wading in the shallows and feeling for them with their feet.

The shores of Cape Bon, less rich in animal life than those of Kerkenna, are visited by shoals of fish migrating from one basin of the Mediterranean to the other. Enclosures erected along the shore at equal distances entrap the tunny-fish, which are the most highly prized of all these migratory fishes. The Lake of Biserta, which, according to a legend related by El-Edrisi furnishes exactly twelve varieties of fish, one for each month in the year, is also an important fishing-ground, chiefly for mullet, which are caught by a very ingenious device, dating probably from the Punic period. From side to side of the channel is stretched a rope, along which runs a ring retaining a female mullet, who swims easily in the water; the male fish flock round this enticing bait, and are thus caught in shoals with nets. Palisades of reeds and willows are erected in the middle of the current, through which the fish can easily enter, but are unable to retreat. Finally, on the western coast of Tunis, towards Capes Serrat and Negro, the coral banks stretch from the

bay of Tabarka westwards along the Algerian coast; although now somewhat impoverished, these banks were till recently visited by hundreds of vessels from Torre del Greco. The fishing for those shell-fish (the murex) which supplied a purple dye, has been abandoned since the time of the Romans. The enormous heaps of *murex* and *purpura*, similar to those on the beaches of Sidon, still seen on the shores of Jerba and Lake Biban, are a proof of the great importance of this industry to the old Phœnician colonies along the African seaboard.

### Inhabitants of Tunisia.

Beyond the territories of Tripoli, which are mainly deserts, and offer along the coast but few ports, a narrow cultivated zone, and oases few and far between, Tunis must naturally have proved pre-eminently a land of promise to invaders coming either from the sea or from inland. Its fluvial basin, the first occurring in Africa west of the Egyptian Nile, from which it is separated by such vast wastes, its fertile plains, its lakes and gulfs teeming with fish, its ports so excellently situated both for commerce and for the military command of the Mediterranean basin, were advantages calculated to attract warlike nations, and convert this region into a battlefield for rival states. Stations covered with the scattered remains of stone implements and weapons, besides megaliths, menhirs, dolmens, cromlechs, rare in certain regions of Tunis but very common in others, still recall the presence of peoples having either the same origin or the same religion as the primitive inhabitants of Brittany and Andalusia.

In the very beginning of written history, the Phœnicians had already established themselves at the very angle of the continent, whence they could command the waters of Sardinia on one side and those of Crete on the other. Then the Romans, become powerful, desired in their turn to conquer this African foreland, without which none of their Mediterranean possessions, Sicily, Sardinia, or Italy itself, would have been free from attack. Thus for more than a century the known world was shaken by the struggles of these two powerful rivals, until the Phœnician city was levelled with the ground, and succeeded by a flourishing Roman settlement. The Vandals and the Byzantines afterwards contended for the possession of Tunis, which many successive invasions of the Arabs brought at last within the circle of the Mohammedan world. The Turks merely succeeded in giving governors to the country, and the invasions of the European Christians, under Louis IX. and Charles V., did not last long enough to produce the slightest perceptible change in the civilisation of Tunis. But, on the other hand, piracy, by introducing a constant stream of slaves into the country, led undoubtedly to a considerable modification of type amongst the urban populations.

### The Berbers and Arabs.

The ancient Carthaginian and Roman masters of this region, both of whom ruled over it for many centuries and covered it with towns, fortresses, and monu-

ments, have imparted none of their physical characteristics to the people, as far at least as can now be detected; nor have any traditions of their former supremacy survived amongst the local communities. The most careful observers have also failed to detect any traces of Greek or Vandal influences in the outward appearance, languages, or usages of the present inhabitants of Tunisia. The only two ethnical elements represented in the country, apart from the Jews and foreigners who have recently immigrated, are the various groups rightly or wrongly known by the comprehensive term of "Berbers," and the descendants of the Arab invaders. These latter, to judge by their speech, and the ascendancy which they owe to their traditions representing them as the conquerors and reformers of the country, apparently compose the largest part of the nation. But those peoples who in the time of the Carthaginians constituted, under various names, the very basis of the population, are in reality still by far the most numerous, however much they have become mixed with those other elements which, by a succession of crossings, have become gradually merged in the native type. The ancient language has not yet entirely died out, and the inhabitants of Jerba Island still speak a Berber dialect, and even wrote it at one time. A book written in Berber is still said to be preserved in one of the villages of this island. The ancient Libyan characters were probably employed in its composition, because the Jerâba, as the islanders are called, recognise the letters of their own alphabet in the copies of Libyan inscriptions which have been shown them. The powerful Urghamma tribe, who are found in those parts of Tunis near the frontier of Tripoli, also speak a Berber dialect closely related to that employed by the Jerâba. The mountaineers of the Jebels Dwirât and Metmâta, who belong to the same "Kabyle" group as the Tripolitan Berbers of the Jebel Jefren, also speak this dialect. But it is not true, as was till recently believed, that the Drid or Derid clan in the northern portion of Tunis on both banks of the Mejerda, still speak the Berber language. All the northern and central Tunisian tribes, even those who have jealously preserved their Berber traditions and genealogies, have become assimilated to the Arabs in speech. Besides, these two ethnical elements have become so closely connected during the last thousand years and more, that many a tribe bearing a single collective name consists in reality of distinct fractions, some of their clans being of Berber others of Arab extraction. Thus the Khumirs, who are usually considered as forming a homogeneous group, are divided into four secondary tribes, of which one is of pure Berber origin, whilst the three others are said to be of Arabic descent; but all alike employ the Maugrabin dialect. Still, the traditional descent of a tribe is not a reliable guarantee for the purity of its origin, because from generation to generation the race may have been greatly modified by marriage. It is a recognised fact that, in Northern and Central Tunis, the two races have been almost merged in one by these crossing; Arabs and Berbers have become mutually assimilated one to the other. The relatively low elevation of the uplands and the breadth of the valleys, which ramify far into the interior of the country, have facilitated this ethnical fusion, and the abrupt contrasts that are met with in Algeria and Morocco between the Kabyles and Arabs, who still differ in appearance and customs, are seldom seen

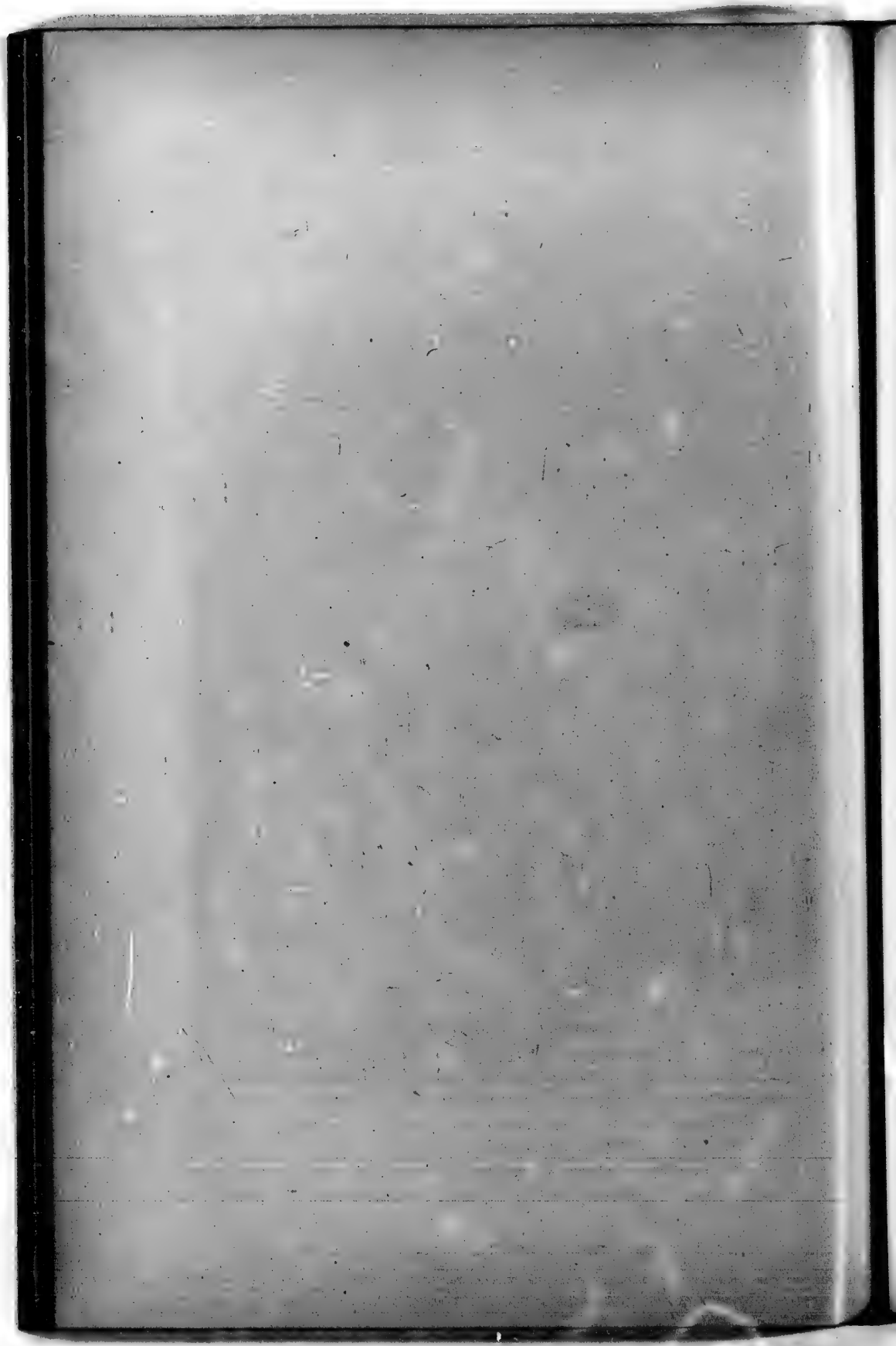
in Tunis. The pure Berber type is to be found only amongst the southern highlanders and in Jerba Island. Here, as in the Algerian Jurjura, it has been noticed that, compared to the Arabs, the natives have shorter and broader features, that their skull and facial outline are less regular, the hair lighter, the glance more animated, the expression more frank, and that they are altogether of a more cheerful and enterprising disposition.

Although the difference between the two races is very clearly defined, that between their several modes of life is much more strongly marked. Both townsmen and nomads, be their origin what it may, present the strongest contrasts, and mutually treat each other as if they belonged to two different nations. According to the latest census, the population of Tunis is equally divided between the "men of the houses" and the "dwellers in the tents." In the northern regions the nomad tribes, surrounded on all sides by towns, villages, and cultivated lands, have a somewhat limited range, whilst in the south they possess the whole extent of the steppes as their free camping-grounds.

Besides, families which are but half nomad reside in all parts of Tunis, at one time cultivating the ground in some depression, at another following their herds to the upland pasture lands. Famine, civil strife, and war often break up the friendly relations between the tribes, and the groups composing them often remove to a distance of hundreds of miles from each other. Not a single generation passes without these migrations, which are analogous to those handed down to us by history and by local traditions. Thus it is that the Drids or Derids, who formerly followed in the train of the "Bey of the camp" as taxgatherers, have become scattered throughout various parts of Tunis on both banks of the Mejerda; while the northern Ulad Sidi-Abid tribe, neighbours of the Bejas, have sent an offshoot into the Nafta oasis, near the Shott-el-Jerid. According to M. Duveyrier, the Dedmakas, or Tâdemakkas, one of the tribes composing the Khumir group, are closely related to the Kêl-Tâdemakket, now incorporated with the confederation of the Tuareg Auelimmiden, on the banks of the Niger, and all the other Khumirs, even those who call themselves Arabs, came from the south and from the west some centuries ago. The Tarabelsi also, who cultivate the land in the suburbs of Tunis, are evidently descendants of immigrants from Tripoli, as their name seems to indicate. On the other hand, it is a common tradition in Tunis that the Maltese, those Arab islanders who have become such fervent Catholics, are closely related to the Ulad Saïd who roam throughout the environs of Sûsa.

At a still recent period a great many nomads lived by war and pillage, either as soldiers of the Bey, or as professional brigands. The Urghammas, on the frontiers of Tripoli, number some thirty thousand individuals, representing an armed force of at least four or five thousand men, and were exempted from all tribute, for the excellent reason that they refused to pay it; but they were officially entrusted with the defence of the border lands against foreign marauders. Hence, under pretence of carrying out the Bey's instructions, they crossed into the neighbouring territories at their pleasure, killing the men and carrying off the women, children, and provisions. The Urghamma warriors, proud of their sanguinary exploits, were accustomed to

KHUMIR MAN, WOMEN, AND CHILD.



make a notch in the stock of their guns for every enemy they had killed, and these weapons are still to be seen covered with notches from the butt-end to the very muzzle of the barrel. The Frenchas of Kalaa-es-Senam, entrenched within their upland stronghold, held the Bey's soldiers in such contempt that, when advancing to collect the taxes, the troops were often received with the present of a dead dog, accompanied by derisive cheers and cries of "There is our tribute to your sovereign." The Hamâmma, who roam over the steppes in the vicinity of Gafsa, claim to be faithful subjects of the Bey, mainly, however, because they can thus rob with the greater impunity. Every male of this tribe is taken by his father, the very day of his birth, placed upon a horse already caparisoned, and welcomed with the following traditional words: "Saddle and bridle, and life on Islam." That is to say, that the child's only inheritance would be a horse and weapons, and that it would be his duty to earn his daily bread by plundering his Mussulman brethren, inhabitants of the vast Mohammedan world. At the present time the sons of these bandits, finding it no longer profitable to gain their living by plunder, emigrate to the cities, more especially to Bône and Tunis, where they are employed chiefly as porters. Travellers crossing the Urghamma territory are often surprised to meet members of this tribe familiar with the French language. These are emigrants who have become rich and returned to their native land.

Till recently, before the occupation of the country by the French troops had powerfully modified the internal relations, the whole of the Tunisian tribes as well as the other communities, were split up into two *soff*, or hostile leagues, which frequently changed sides according to the assessment of the taxes or the exactions of the cadis. One of these two great parties, that of the Ahaimîya, claimed to be that of the Bey. In Central Tunis this faction was more especially represented by the great Hamâmma tribe, whilst the Beni-Zid were at the head of the Pashiyas, or the party of the independent Arabs. They claim to be the descendants of a French renegade, and on this ground they welcomed the explorer Pellissier, giving him the title of "cousin." The Ulad-Ayars of the Kef district, the Zlas of Kairwan, the Nefets of Bû-Hedma, the Urghammas, and the Akkaras of the Tripolitan frontier, were the allies of the Hamâmas, whilst the Metalits of Sfakes the Suâs of Sûsa, the Majers, the Frashish of the Algerian frontier, and the Harems of Cabes, were numbered amongst those Beduins who recognise no masters. Some years ago, by a skilful stratagem, the Beni-Zid obtained possession of the Kasbah of Sfakes, and did not evacuate it till they liberated all the prisoners of their faction whom the Bey's government had imprisoned in this citadel. The Mahadebas of the coast, between Sfakes and the Syrtis Minor, are respected by all alike as a tribe of Marabuts or priests. The Bey has exempted them from all taxes, on the condition that they afford protection and hospitality to the caravans. The Nefzawa, who occupy the peninsula of the same name between the Shott-el-Jerid and the Shott-el-Fejej, are divided between two hostile factions. The tribes composing the independent party attempted to resist the French, but after a few desultory skirmishes they fled into Tripolitan territory. These fugitives, estimated at more than thirty thousand, found it extremely

difficult to get a living amongst the southern tribes, and the majority returned to sue for peace. The ringleaders of the insurrection belonged to the tribe of the Nefet.

Amongst the town Arabs, often spoken of as Moors, like their fellow-country-

Fig. 39.—Native Inhabitants of Tunis.
Scale 1 : 8,000,000.

men in the towns of Algeria and Morocco, the numerous ethnical elements of which they are composed have become so intimately intermingled that it is no longer possible to recognise them. Even the Moors who were driven out of Spain, some

in the fifteenth, others at the commencement of the seventeenth century, and to whom cultivated land in the suburbs of the cities was assigned as special quarters, have left in but few towns and villages descendants who can be distinguished from other Arab townsmen. Some few noble families, however, have preserved their genealogies, or have even retained the keys of their mansions in Seville or Granada; these are still spoken of as *Andulos* or *Andalos*, that is to say, "Andalusians." Moreover, a few towns and villages are mentioned where workmen of Spanish origin carry on a special industry, and where the traditions of their trade have enabled them to keep alive the memory of their origin. The skilful gardeners of Testûr and Teburba, on the lower Mejerda, know that their fathers dwelt on the banks of the Jenil and Guadalquivir; at Nebel, on the east coast, the pottery industry is maintained by these exiles, who have retained the name of Andalusians, and who, from father to son, have religiously transmitted the fictile vases brought from Malaga by their fugitive ancestors. At the time of Peyssonnel's voyage, a hundred years after their expulsion from the Iberian peninsula, they still spoke Spanish and dressed in the ancient Andalusian fashion. A certain portion of the "Moorish" population of Tunis is also composed of renegades of all nations, who were brought into the country as slaves at the time of the slave trade.

The town peoples, and especially those called Tunsi, or Ulad Tunés, *i.e.* "Children of Tunis," are much lighter in colour than the nomad tribes; some few are even of an olive colour, the general hue of the skin resembling that of the Spaniards and Southern Italians. The face is usually olive, the nose long, the eyebrows thick, the beard dark and scanty; they are of middle height, with well-shaped figures, and graceful and dignified in all their movements. Individuals are never seen amongst them with the slight development of the calf so noticeable amongst the Semites of the Arabian peninsula as well as amongst the Hindus; few also are met who present such an obese appearance as their fellow-citizens, the Spanish Jews. The majority of the Tunisians are religious, but perfectly free from fanaticism. They are staid, dignified, and benevolent in disposition; and however much they may be corrupted by a commercial career, they are, as a rule, far honester than their Christian and Jewish rivals. In the days when piracy and the slave trade flourished, the Tunisians were noted for the kindness with which they treated their slaves. It is very probable that the "captive maidens of Tunis and Bizerta," who passed their time spinning yarn in the dwellings of the Christian pirates, were less happy by far than the Christian women who became the prisoners of the Tunsi. Except amongst the merchants, there are very few Tunisians who avail themselves of the Prophet's example to espouse more than one wife at a time. In industry, taste, aptitude for business, and finally in education and literary culture, the Tunisians are considered to be the superiors of all the other Moors, who, however, can claim the palm for better morals. Before the Turkish rule, and when the southern tribes encamped on the commercial routes had not yet become brigands, Tunis was the great market for exporting the goods of all the peoples of the Sudan. The Negroes of the Niger and Lake Tsad considered all merchandise other than that manufactured by the Tunsi as unworthy

of their notice. "Tunis invents, Algiers prepares, and Oran destroys," says an Arab proverb quoted by Théophile Gautier, but for physical energy and love of work the proverb must be read in an inverse way. The Africans of Tripoli are the most indifferent workmen; those of Tunis are preferable, although inferior to those of Algiers, who, in their turn, have to yield the palm to the natives of Morocco.

### The Turks.

The Turkish element, formerly represented by the Beys and Janissaries, has for some time past been on the wane in Tunis, and now Turks, properly so called, are no longer to be seen in this country. The Osmanli, and together with them the reigning family, by intermarrying have all become Kulugli, and are gradually being absorbed in the predominating race of the Arab "Moors." The Malekite religion, to which they belonged, is gradually being replaced by the Hanefite ceremonies, which are practised by the bulk of the Maugrabin Mussulmans. Religious heresy has, nevertheless, a large number of followers in the towns of Tunis. The Beni-Mzab, who regularly emigrate to Tunis as charcoal merchants and firemen at the baths, are all Kharejites, or "Dissenters." They are also called Khamsiya or "People of the Fifth," that is to say, that they do not belong to any of the four orthodox sects. Like the Beni-Mzab and the Berbers of the Jebel Nefusa, the Jerâba are also "People of the Fifth," and practise all the rites of the Ibadhite persuasion. They wear the sheshia, the gandura made of cloth embroidered with brilliant coloured designs, look upon the cat as an unclean beast, and hold the chameleon in awe. The rites of their religion oblige them to take off their nether garments when they prostrate themselves to say their prayers. The orthodox religious brotherhoods are represented in Tunis more especially by the Tijaniya, the Madaniya, the Aïssawa, and in many tribes live holy families composed of Shôrfa, or "Sons of the Prophet." As a general rule, more fanatics are found amongst the townsmen than amongst the nomads. According to Pellissier, this is due to the kind of education which prevails in the Mussulman world, where "those who are the most learned are also the most narrow-minded." Besides, many practices anterior to the advent of Mohammedanism are still extant in this country. The natives still tie strands of wool to certain trees pointed out by their traditions; they have a great dread of the evil eye, and protect their dwellings from it by the marks of their five fingers, the numeral 5—the symbol of the fish—being considered as especially favourable. The father of a large family contents himself with the remark, "I have five children," so as not to mention other numbers of less propitious or even fatal influence. In times of drought, the natives have recourse to charms and witchcraft, so as to open "the gates of the clouds." When the rain is very tardy in coming, and their young crops and harvests are in danger, the people occasionally seize hold of their kaid and plunge him into a spring, taking care to let the water trickle through his beard. "This is their fashion of celebrating rogation days," says Beulé.

## The Jews.

In proportion to the Mohammedan population, the Jews are more numerous in the regency of Tunis than in Algeria. They are grouped together in important communities, not only in the city of Tunis, but also in the other towns of the coast and in Jerba Island. Many of these Israelites are the descendants of Jews settled in the country before the conquest by the Arabs, and it may be asked whether these families, till recently looked on with contempt, do not contain some elements of the ancient Carthaginian masters of the country. The Jews driven out of Spain and Portugal, as well as all those who have immigrated within the last few hundred years, are generally known by the name of Grana, that is to say, natives of Leghorn—Gurna, or Leghorn, having been the principal market of the Jews expelled from the Iberian peninsula. The Grana, most of whom had placed themselves under the protection of the Italian consul, or the representatives of other foreign powers, had rarely cause to complain of the Tunisians, whilst the "Old Jews" were denied all rights to appeal against any injustice or extortion they had had to submit to. A great many families were compelled to abjure their faith to avoid persecution; but although they willingly consort with their ancient co-religionists, they have remained Mussulmans. There are also Jews in Tunis whose doctrines have become modified. Such are the Israelites of Jerba Island who worship saints, and show great veneration for the Mussulman marabuts. So recently as 1868, seventeen Tunisian Jews were assassinated, and no one dared to pursue the murderers, who got off with impunity. A special head-dress distinguished the Jews who had no rights from those whom no one dared to molest without the permission of the consuls. By a singular irony of fate, the majority

Fig. 40.—Tunisian Jewess.

of the Spanish Jews in Tunis, remembering that their ancestors came from the Iberian peninsula, have laid claim to their origin so as to obtain the protection of their ancient persecutors. In the same way, before the annexation of Tunis to France, a number of refugees, who had quitted Algeria to evade submission to the hated conquerors, claimed to be Algerians, with a view to obtaining the support of the French Consul against the Bey's Government.

All the Tunisian Jews, whether of native or extraneous origin, follow the Spanish rite, reading the Pentateuch, and saying their prayers in Hebrew; nevertheless, one of their invocations is in Arabic, and this, according to Maltzan, is precisely the one most frequently uttered, and indeed the only one that the women use. This ancient prayer of the persecuted people beseeches the Lord to "let loose his wrath upon Spain, as well as on Ismael, Kedar, and Edom," the three latter names being figuratively applied to the Arabs, Mussulmans of every race, and Christians. In spite of these requests addressed to an avenging Deity, the Tunisian Jews are mild and very pacific by nature; nor do they appear to merit the reputation for greed which they share in common with all the rest of their brethren; but they are very adroit in seizing the opportunity for developing new industries. They are increasing rapidly, the number of births being far in advance of the deaths. For some time past they have crossed over the boundaries of the Tunisian *hara*, or *ghetto*, to which they were restricted, and have spread throughout all the quarters of the town. In certain parts of the bazaar they have actually driven out the Arabs, gaining ground shop by shop. They are no longer distinguished by a special costume, many of them dressing in the European fashion, as the laws which forbade them to clothe themselves like the Mussulmans have been abolished. But they are easily distinguished by the type of physiognomy, by their bearing, and often by their obesity, the Spanish Jews of Tunis having a singular tendency to become corpulent. Till quite recently, young girls were subjected to a special fattening process, art stepping in to assist nature in making them "substantial members of society." These young girls are not considered "presentable" till their arms and legs have become large enough to retain the rings and bracelets which their mothers had worn. Whilst in nearly all other countries of this world the Israelitish race is distinguished by the relative purity of its morals, the Jews of Tunis contrast forcibly with the other inhabitants precisely by their gross immorality; in fact, they may be looked upon as the chief source of all the vice of this city.

### The Europeans.

Like the Jews, the Europeans residing in Tunis form two distinct classes, the families of the merchants settled in the country for several generations, and the immigrants of recent date, who still look upon themselves as foreigners. The class of the "Old Tunisians," which comprises a few hundred French and Italian families, till recently constituted a kind of nation within a nation, like the Levantines of Constantinople and Smyrna. Their nationality conferred privileges upon them

of which they were proud. Grouped round their respective consuls, they escaped the extortions to which the natives were exposed, and this privileged position had naturally the effect of binding them to their native land. But in spirit and morals they differ strikingly from their fellow-countrymen beyond the seas. Below the families of these merchant princes is a restless crowd of hangers-on, mostly impoverished immigrants. The English consul might surround himself with a veritable army, because the Maltese are much more numerous amongst the Europeans settled in Tunis, if however the name of European can properly be applied to these Arab Catholics. The vicinity of the Maltese archipelago, which is but 20 miles from the port of Tunis, enables the poorest to seek their fortunes on the mainland, where they settle down as porters, watermen, merchants, innkeepers, and gardeners. Certain streets in Tunis are entirely occupied by Maltese, and even on the most distant routes from the capital these island traders are to be seen traversing dangerous highland regions on foot, with their wives and children, and driving before them horses laden with various kinds of merchandise. The Calabrians and Sicilians also form a considerable section of the population, and to these must now be added the ever-increasing colony of the Northern Italians.

Although till recently inferior in numbers to the Italians and Anglo-Maltese, the French colony was the most important, thanks to its numerous Beni-Mzab and other Algerian allies. The annexation of Tunis to France has naturally resulted in a proportionate increase of French immigrants, and they are settling, not only in the capital, but also in the commercial towns along the coast. The railway which crosses the whole country from east to west, the telegraph stations scattered throughout the territory, the camps and fortresses occupying the strategical positions, and the tracts of land bought up for cultivating vines and olives, all attract to the interior a continually increasing stream of French clerks, merchants, speculators, and workmen of every description, as well as the Kabyles who call themselves Frenchmen, and who come to offer themselves as reapers and harvesters. The social and economic possession of Tunis was much more rapidly accomplished than that of Algeria. This country, after having been so long separated from Europe, and by its history become connected with the Asiatic world, is evidently resuming in the western basin of the Mediterranean the position which it should hold from the nature and relief of the land, its flora, and its climate.

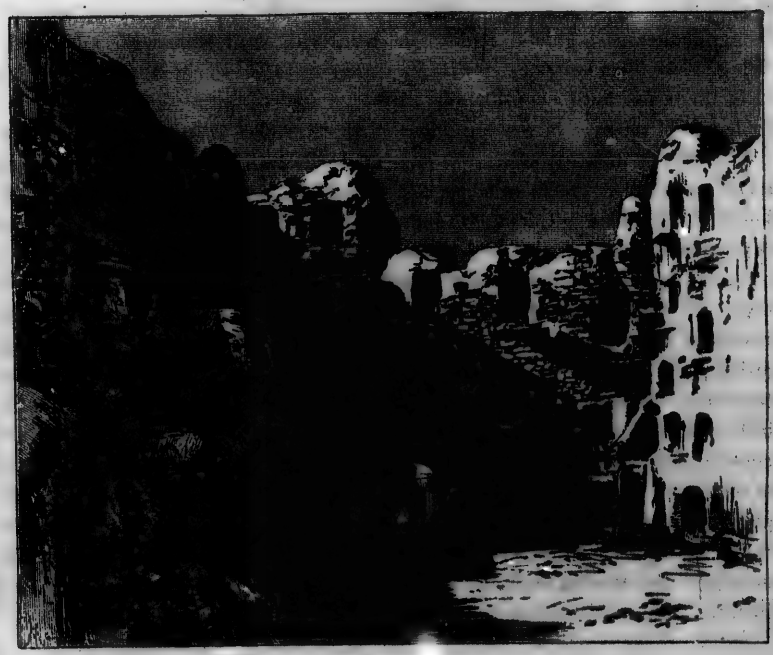
## Topography of Tunisia.

*El-Biban*, the frontier town near the Tripolitan coast, would be of some strategical and commercial importance were the two straits, which it overlooks at the entrance of the Bahirat-el-Biban, or "Lake of the Gates," of sufficient depth to permit vessels of large size to enter this vast basin. As it is, there is scarcely waterway for the fishing-boats to anchor before the fort. Besides, its export and import trade, at any time but slight, has been transferred north-westwards to the harbour of Zarzis, or Jerjis, a town consisting of five distinct villages, which are scattered amongst cornfields, palm and olive groves. This region was at one time so fertile

that, according to a local tradition, a canal, excavated in the plains of *Zian*, or *Medinet-Zian*, an inland town now in ruins, carried down to the port of Zarzis a stream of olive-oil which the natives collected in barrels and exported. But the plundering hordes of the Akkara and Urghamma Beduins have effectually dried up this river of oil by cutting down the olive groves. Statues, Roman inscriptions, and other valuable antiquities have recently been discovered at Zian. According to Barth, the Copts had at one time very numerous colonies on this part of the coast between Tripoli and Jerba Island.

Westwards are the towns of *Metamer* and *Kasr-el-Mudenin*, inhabited by tribal groups of the Urghammas, built on fortified mounds in the midst of the plain.

Fig. 41.—Houses at Kasr El-Mudenin.



Before the occupation of Tunis by the French, the Kasr or Castle of El-Mudenin sustained a siege against the bey's army. In these towns may be seen the gradual transition from the cave architecture to that of houses, properly so called. Buildings are erected in such a manner as to resemble cliffs, in which oval apertures made at various heights represent the openings of caves and grottoes. The natives reach these artificial caves, some of which are five or six stories high, by means of ladders or steps roughly hewn in the face of the wall. In the neighbouring mountains, and more especially in the Metmata range, many such dwellings hollowed out in these beds of soft chalk are very similar to those of the Tripolitan troglodytes.

The caves, which serve as dwellings for men and enclosures for domestic animals, are hollowed out laterally at the bottom of a kind of pit open to the sky, and with vertical sides. A slightly inclined passage, defended by a closed gate, leads from below to the surface of the earth. In the surrounding plains there are also larger excavations to be seen, similar to those made by the Gauls, and which are still used in the country of the northern Gallas. They were doubtless used by the natives as places of refuge when their country was overrun by hostile tribes. Sepulchral monuments in the shape of truncated pyramids have also been found in this region of Tunis: they are encircled by an enclosure of stakes, menhirs, or other megaliths.

Jerba Island, some 160,000 acres in extent, is the most populous part of Tunis; proportionately speaking, it was nearly as densely peopled as France, until, a few years ago, many families were swept away by the cholera. Its forty thousand inhabitants look upon their island as a kind of large town, and all its numerous groups of houses, protected by forts of Spanish construction, are termed *hunts*, or "quarters." Most of the Jerabas dwell in little hamlets, or else in isolated cottages standing in their separate enclosures. The whole island is under cultivation, and although all the water for irrigating purposes comes from wells and cisterns, it is extremely productive, thanks to the ceaseless labours of the patient Beduins who till the land. Jerba Island of all other Tunisian regions possesses the finest olive-trees, the oil from which is greatly preferred to that of the mainland. The other fruits obtained from the orchards—apricots, pomegranates, figs, and almonds—are also excellent; while the vine, cultivated mainly by the Jews, yields a golden wine which is compared with those of Samos and Santorin. Clumps of palm-trees, dispersed in the midst of the gardens, are protected by law and yield dates which, although better than those of Kerkenna, are far inferior to those of Beled-el-Jerid. These trees are often used for the manufacture of palm-wine, which is obtained by means of incisions made at the base of the trunk.

The agriculture to which the Jerabas pay such great attention is, however, insufficient to give employment to all the inhabitants. The seaside communities are engaged in the capture of fish, octopuses, and sponges, while the potters manufacture a peculiar vessel, which acquires its white tint by being immersed in the sea. Numbers of weavers, each working in his own hut, manufacture those coverlets and materials of silk, wool, and cotton which are so greatly admired in the bazaar of Tunis, and which are exported to considerable distances, even as far as the markets of Bornu. The Jerabe men emigrate in crowds to the large towns of Tunis and Tripoli, and, like their co-religionists, the Beni-Mzab, they are found everywhere, even in the remote inland markets of the continent, as well as in Constantinople and Egypt. Nevertheless, the Maltese are beginning to compete with them in Jerba itself. In 1860, as many as three hundred had already settled in the principal town of Jerba.

The ancient capital, which like the entire island bore the name of *Menine*, was situated on the shore of the eastern strait, at the head of the bridge which connected the island with the mainland. The still remaining ramparts of this great city are 3 miles in circumference. In all parts of the island, which in the time of

the Romans was a health-resort for the rich merchants of *Byzacena*, are found

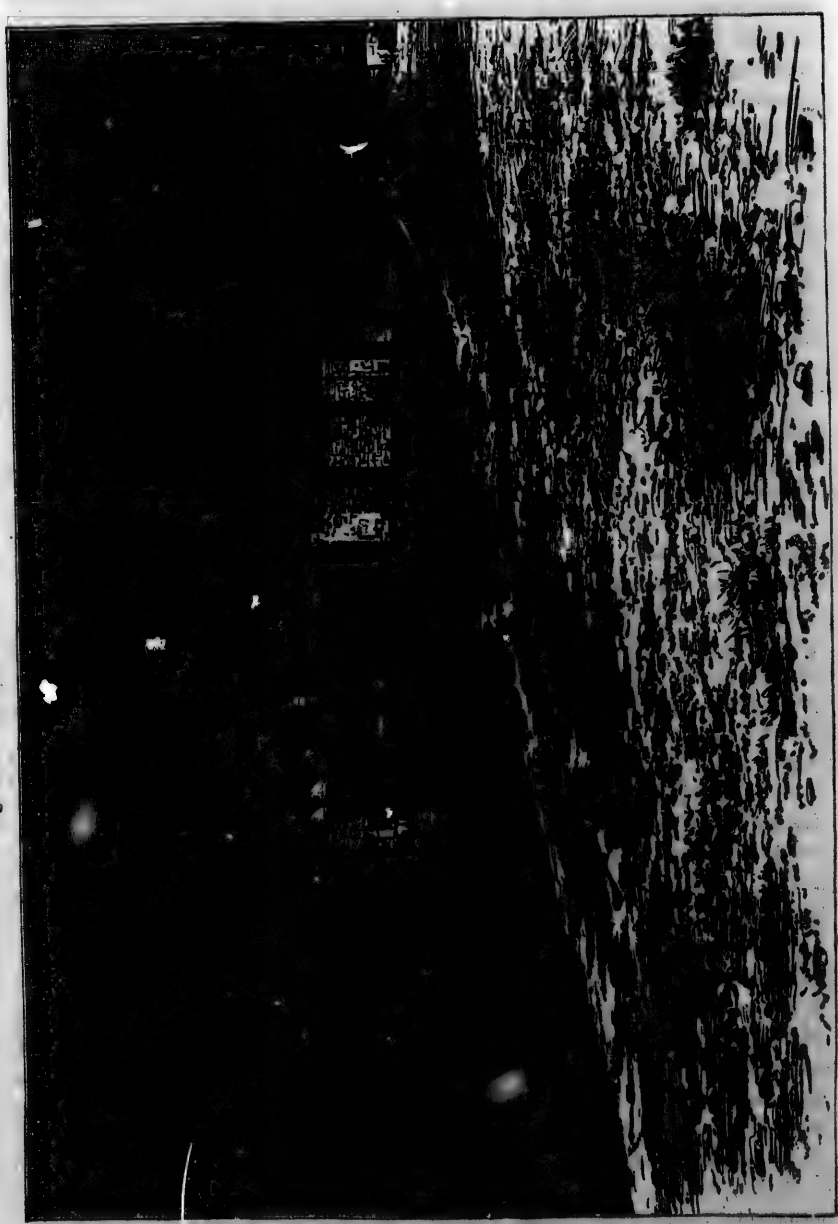


Fig. 42.—Jerba Island. Castle near Hara Sud.

other ruins of towns and villas, but no traces of any buildings remarkable for their architecture. On the site of Meninx all that is now to be seen is one of

those half-ruined *borj*, or old strongholds, which are dotted round the whole island. The only *humt* on the southern shore which merits the name of town, is the *Humt Ajim*, standing close to the western strait, which is practicable to ships.

The present capital of Jerba stands on the northern side, in a position very unfavourable to trade, for large vessels are obliged to anchor some miles from the shore. This town, or rather this collection of scattered houses, is merely known by the name of the "market;" it is, in fact, the *Humt Suk*, or *Suk-el-Kebir*, the rendezvous of all the Jeraba merchants. The Jews, who are very numerous, and are the only persons grouped together in a compact community, inhabit dirty, unsavoury, and dilapidated houses. They claim to have arrived in the island at the time of the Babylonian captivity.

In the centre of the Catholic cemetery, a column perpetuates the memory of the ancient *Borj Rius*, or "Castle of the Heads," a pyramid of bones which the Turks erected in 1560, by heaping up the skulls of the vanquished Spaniards. About the year 1850, the Tunisian Government caused this ghastly monument to be demolished, as a mark of international courtesy.

On the side of the Syrtis Minor facing the continent, the largest group of houses is that to which the name of Cabes has been given. It is not a town, but a collection of villages and hamlets scattered in the midst of the palm-trees. Viewed from the sea, the oasis looks like an island of verdure through which glare the white walls of the buildings here and there; a streamlet, whose upper bed is occasionally dry and nearly always blocked by sands at low tide, winds between the villages, ramifying in all directions like canals of irrigation. Near the mouth of the wed stands the *Borj Jedid*, or "New Castle," surrounded by the wooden huts of a village of "Mercanti," to which the soldiers have given the name of "Coquinville." Many a great city has, nevertheless, sprung from a much humbler beginning than this.

Farther up, both banks are covered by the houses of *Jara*, the principal town of the oasis. By the very course of the irrigating trenches, disposed in broken lines, like the ramparts of a citadel, it is at once evident that this was formerly the site of a fortified city. It was doubtless the citadel of the ancient Carthaginian town of *Ta-Capa*, which was successively occupied by the Romans, Byzantines and Arabs, and whose name may still be traced in its present form of *Cabes*, *Gabes*, or *Gabs*. The ruins of Roman buildings have been employed in constructing the villages of Jara and *Mensel*, the latter situated over half a mile farther south, on the right bank of the wed, in the central part of the oasis, where the market is held.

Still farther west are many other villages dispersed amongst the palm groves. Altogether the various villages of the oasis have a collective population of about ten thousand souls, amongst whom are included a few hundred Jews. The small European colony has been recently increased by a French garrison, Cabes having been selected as the capital of a military circle; a Franco-Arab school has also been opened here. Before the arrival of the French, feuds were of constant

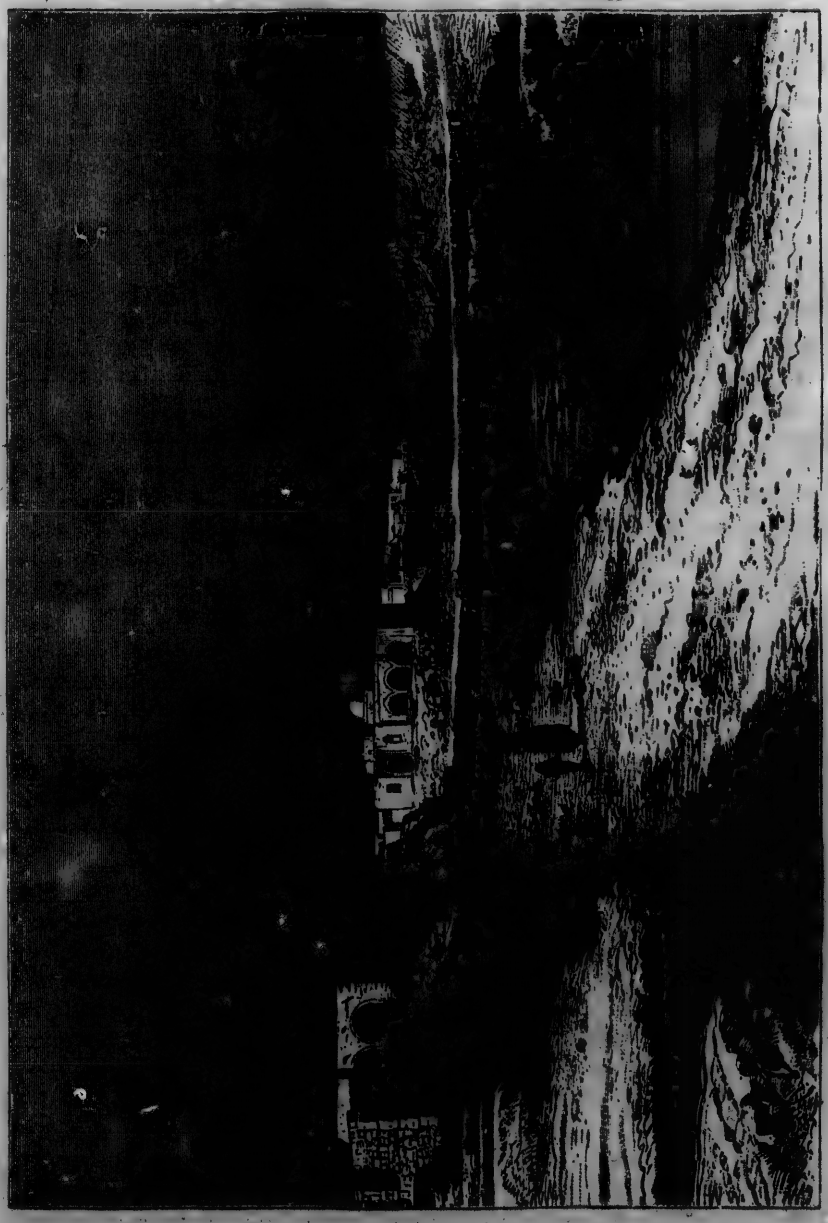
occurrence between Jara and Menzel: hence, as has been jocularly remarked, the name of Arad, or "Discord," which has been given to the province.

Thanks to their orchards and fields, the people of Cabes may be looked upon as the most highly favoured of all other Tunisian communities. The land, rendered fruitful by the irrigating works, is divided into countless plots, separated from each other by hedges of cactus, earth walls, and thickset palms. Fig, almond, orange, and other fruit-trees grow in wild profusion beneath the fan-like leaves of the palms swaying in the breeze above them; the vine twines its slender tendrils around the branches of the trees, and barley ripens in the shade of the overhanging foliage.

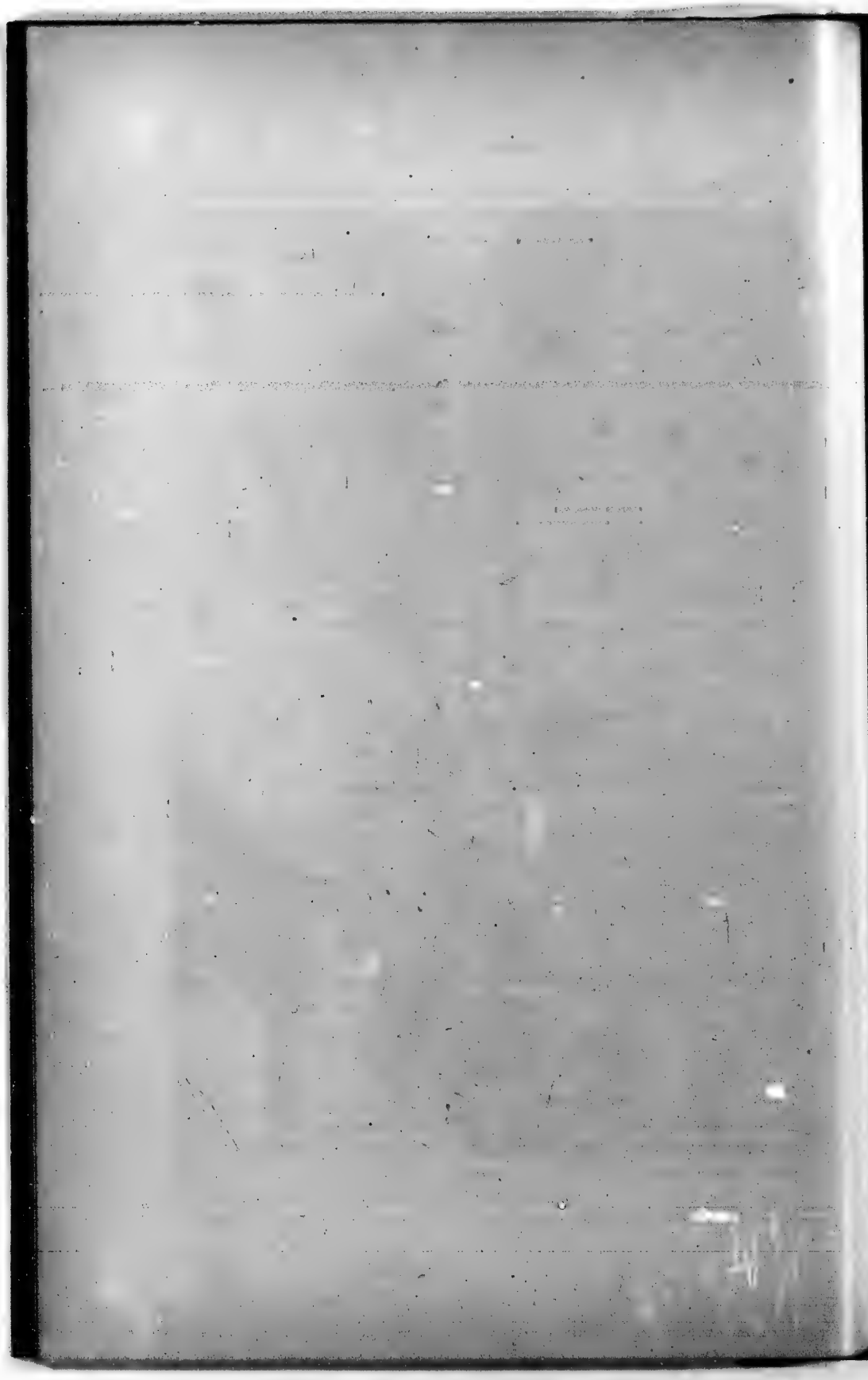
But neither the banana nor the sugar-cane, which composed the wealth of Cabes in the eleventh century, are any longer cultivated, and of its ancient forests of mulberry-trees but a few specimens now remain. The fertility of the surrounding lands has made Cabes the most important port of call along this portion of the coast; it also exports the alfa grass coming from Central Tunis, and it is, moreover, of considerable strategical importance. Situated at the eastern extremity of the depression which, through the Shott-el-Jerid, penetrates far inland, Cabes enables caravans and expeditions, by journeying from oasis to oasis, to skirt the southern foot of the mountains and plateaux of Tunis and Algeria. During the Algerian insurrections, it was through this town that weapons and supplies were obtained. A large smuggling trade thus sprang up along this route, which threatened to become extremely dangerous to the security of French power on the Saharian frontier. By taking possession of Cabes, the French have thus secured one of the gates of Algeria. But Cabes has, unfortunately, no port.

The ancient creek of Tacapa, which, however, was only available to small vessels, has been choked up by the sands, and depths sufficient for vessels of heavy tonnage must be sought at some distance from the shore. The creation of an artificial port by means of jetties and dredgings has recently been proposed; its probable site has already been selected, near the mouth of the Wed Melah, or "Salt River," which receives the waters of the mineral springs of Aïn Udref. An artesian well recently sunk near the Wed Melah, about half a mile from the Mediterranean, is over 400 feet deep, and supplies an abundant stream of water, which rises 13 feet above the ground. This projected harbour is to be completed by a railway which will be connected with the Algerian system through Gafsa, Tebessa, and Suk-Ahras. Bona and Cabes would thus become two corresponding ports, the traffic between which would be directly conducted overland, and the merchants would be no longer compelled to skirt the Tunisian promontories to the north. When Cabes is able to receive vessels of heavy tonnage, no other town of all the French possessions will present greater advantages as a terminus on the coast for a railway crossing the Sahara to Lake Tsad. From the same place will also start the longitudinal line running from sea to sea south of the island of Maghreb. The new town already enjoys a considerable trade, exporting alfa, dates, and henna by a regular service of steamboats.

West of Cabes, and near the southern shore of the Shott-el-Fejej, several



GABES—VIEW TAKEN FROM THE JARA GARDENS.



villages, scattered in the midst of plantations like those of Cabes, constitute a centre of population known collectively as *El-Hamma*, or the "Hot Springs." These springs are the Aquæ Tacapitanæ of the ancients. The four hot springs, which have given their name to the oasis, have a temperature of from 93° to 113° F., and are still used by the natives, who have re-erected an establishment on the site of the ancient hot baths.

Beyond the El-Hamma oasis, which is environed by sands and steppes overrun by the Beni-Zid Berbers, the traveller must pursue his way between the escarpments of the Jebel Tebaga and the shores of the great sebkha before reaching the palm groves of *Nefzawa*, about 36 miles distant. These palm groves, some forty in number, standing in the midst of the sands or encircled by rocks, occupy the lower portions of the triangular peninsula which stretches north-westwards between the Shott-el-Fejej and the Shott-el-Jerid. The most numerous follow in succession along the shore of the great shott on the southern slope of the chain of hills and dunes. In many places they form a continuous forest of palms, very picturesque in appearance but very dangerous to live in, on account of the miasmas arising from the surrounding lagoons. In Nefzawa it is by no means rare to see ten or twelve date-trees springing obliquely from the same root, in such a way as to form a vast framework of verdure encircled by graceful clusters of pendent fruit.

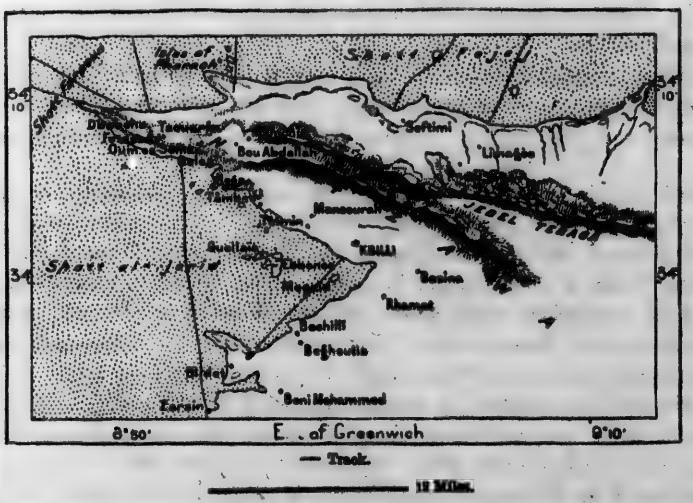
Most of the villages are enclosed by walls and ditches, which would be sufficient to protect them from the attacks of the Beduins, but not against those of an organised force. *Kebilli*, near the north-east extremity of the Shott-el-Jerid, is the principal village of Nefzawa, and in a neighbouring hamlet, to the west, are to be seen some inscriptions which afford grounds for believing that, in the time of Hadrian, the chief Roman station stood on this spot. The settled population of the Nefzawa oasis, now assimilated to the Arabs in religion and speech, belong to two primitive races merged in a common nationality of half-breeds. One of these elements was a tribe of Negro agriculturists, the other the Nefzawa Berbers, a branch of the great Luâta tribe, originally from Marmaridis. Around these inhabitants of the oasis are the encampments of the Arab tribes, most of whom are of a peaceful disposition. Amongst them are the Merâzigs, who feed their flocks to the south of Nefzawa and frequent the market of *Dus*; they occasionally push on their trading expeditions as far as Ghadames. Farther south, in the few oases and around the wells skirting the southern part of the Shott-el-Jerid, is the powerful Ghorib tribe, which is allied to the Algerian peoples of the Wed Suf, from whom it is separated by the region of sandhills. A much smaller tribe, but still very dangerous on account of their plundering habits, is that of the Ulâd Yakub, or "Sons of Jacob," who are not to be confused with another of the same name, encamped in the mountains south of the Mejerda. These Ulâd Yakub of the desert wander to the south-east of Nefzawa over upland steppes, whence they command the routes between Tunis and Ghadames. These are the nomads who have stopped the direct caravan trade between Tunis and Nigritia. Like the Tuaregs, the people of the oases, both nomad and settled, wear the *litsam*, or veil, which

conceals the face from below the root of the nose. In the Nefzawa district M. Teisserenc de Bort has found numerous polished stone implements.

West of Nefzawa, on the other side of the Sebkha-el-Faraun, rise the hills of the narrow isthmus which is known by the special name of Belad-el-Jerid, "Country of Palms," or merely as Jerid, *i.e.* "The Palm Grove," a designation often extended to the whole region of the southern oases. The Jerid is, in fact, pre-eminently *the* date country. Surrounded as it is by shotts and sands, and protected from the north wind by the mountains which rise to the north-east, the Jerid undoubtedly possesses that "fiery air" which is so essential to the life of the palm. Thanks to its abundant springs, it can supply these trees with all the moisture they require; while the water, slightly warmer in temperature than the atmosphere,

Fig. 43.—Peninsula of Nefzawa.

Scale 1: 600,000.



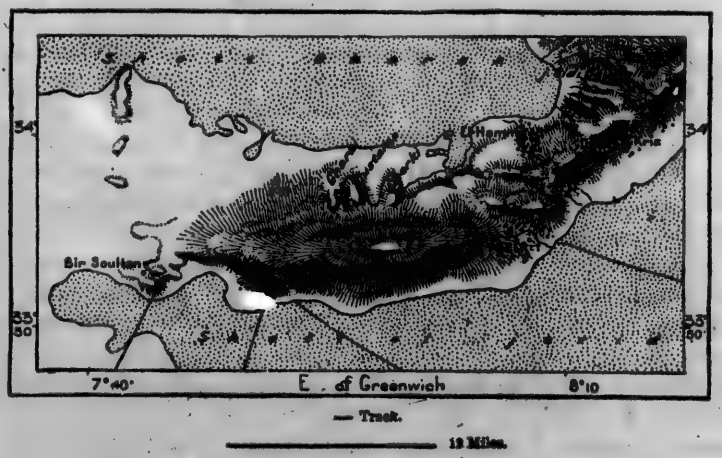

forms veritable thermal rivers which stimulate the growth of the trees. The oases of the Jerid are, as M. Duveyrier expresses it, "natural hothouses," in which tropical plants such as flourish in the West Indies and the Sunda islands might be cultivated; but the natives are content with their exquisite dates—the best of which were formerly reserved for the bey's own table—their no less highly appreciated oranges, fruits of all kinds, vegetables and cereals. Their existence would be one of perfect ease and comfort were they not weighed down by the heavy taxes.

The Jerid has nearly a million palm-trees in a superficial area not exceeding 5,000 acres; 20,000 camels visit this oasis annually, and depart laden with fruit. The women also employ themselves in weaving and making burnous, haiks, and coverlets, which are greatly sought after throughout the whole of West Africa. But the inhabitants of Jerid no longer enjoy the profitable direct trade which they

carried on with the seaports and with the towns of the Sahara during mediæval times, when they were the purveyors of slaves for the Barbary States. Agents and brokers who have settled in the country, more especially the Jews and the Mzabites, now export the products of the oases far and wide. The Naffa oasis has been named Marsat-es-Sahara, or the "Port of the Desert," and the place is still shown whence the vessels are said to have set sail, and where the remains of a ship are even stated to have been found.

Throughout the whole of the "Palm Country," the Arab towns have been preceded by those of the Roman period, the remains of which are still to be seen in many places, although the greater part of the materials have been utilised in building convents, mosques, and defensive works. In the oasis of Tozer, the distribution of the water is still regulated by Roman dykes. As in most of the other

Fig. 44.—Jerid.
Scale 1 : 600,000.




oases, the towns are not compactly built, but consist of quarters scattered amid the surrounding plantations. The western oasis of *Nafta*, which enjoys a sort of religious pre-eminence, a certain number of its inhabitants being "Sons of the Prophet," comprises nine distinct villages and four convents. *Tozer*, the largest and most populous of all the oases, is divided into nine quarters, and serves as the political capital of the Jerid; El-Udiân, the eastern group of oases, consists of many villages, amongst others, *Dgash*, *Kris*, and *Seddada*, which are some distance from each other; lastly, an oasis called *El-Hamma*, or the "Baths," like that in the vicinity of Cabes, comprises four groups of cottages, sheltered by the palms. The copious hot spring (96·8° F.), from which it has received its name, falls into a basin of Roman construction; it is slightly sulphureous, and the natives endow it with astonishing virtues, due to the merits of a saint buried in a neighbouring tomb.

A rock, standing north of Kris in the El-Udiân oasis, is pierced with ancient

quarries, and with a cavern called the grotto of the "Seven Sleepers." From the summit of this hill, commanding the narrowest isthmus between the Shott-el-Jerid and the Shott Garsa, an admirable view can be obtained of the chain of oases and of the two vast basins of lacustrine origin, which stretch away to the east and west beyond the horizon. In the north rise the mountains whence the Hammada spies signaled the approach of caravans or of solitary travellers to the marauders lying in ambush by the roadside. Not far from Kriz, on the north margin of the Shott-el-Jerid, there is to be seen a round figure surmounted by a crescent, carved on the face of a rock. According to Tissot this device, representing the moon, is a remnant of the old Libyan religion. In some respects the inhabitants of the Jerid differ in their manners and customs from the surrounding tribes, who accuse them of eating the flesh of the dog.

In the valley of the wed which, under the name of Tarfawi, or "River of the Tamarisks," ultimately runs dry in the sands at the eastern extremity of the Shott Garsa, follow in succession a few oases, between which intervene wild solitudes. Towards the source of the wed, here called Bû-Haya, occurs the first oasis, that of *Feriana*, whose two distinct hamlets constitute a zawya or religious establishment for the nomads in the vicinity, who belong to the Ulad Sidi-Abid tribe, and who form a kind of brotherhood. The wretched buildings of Feriana are a poor substitute for the monuments of the Roman city, probably *Thelepte*, which formerly stood in the vicinity. The ruins explored by M. Guérin occupy a space of at least three miles in circumference, and nearly all the blocks of stone used in erecting the public buildings, baths, theatres, and even private houses, are of enormous size. The mountain whence this stone was obtained has been quarried to a vast depth; entire strata have disappeared, and the summit is now crowned by an ancient castle. Besides the ruins of *Medinet-el-Kadimah*, or the "Old City," numerous Roman remains, especially tombs, are also found on both banks of the wed, now almost uninhabited. South of Feriana is a rock which has been blackened as if by fire, whence its name of Hajar Soda, or "Black Rock." Another rock of similar appearance has been discovered near the El-Hamma oasis by M. Guérin, who supposes that these "Black Rocks" are aerolites.

The *Gafsa* oasis, occasionally looked upon as belonging to the Jerid, although it is separated from the isthmus of Kriz by a waterless desert zone of a day's march in extent, is situated on the principal bend of the Wed Beyâsh, which is a continuation of the upper course of the Bu-Haya and becomes the Tarfawi farther down. The town, which of all those in southern Tunis has the largest number of inhabitants living in a compact group of houses, stands on a terrace surrounded by a circle of rocks and mountains a few miles distant. One of these mountains is pierced by deep quarries, which branch off into labyrinthine passages. Founded by Melkart, or the Libyan Hercules, the *Kafas*, or "Walled Town" of the Phœnicians, and the Roman *Capsa*, whose name has hardly changed during the course of centuries, is, according to Mannert, synonymous with the city of Hecatompylæ, where Hanno gained his famous victory during the second Punic war. The strategical importance of an oasis situated on the extreme verge of

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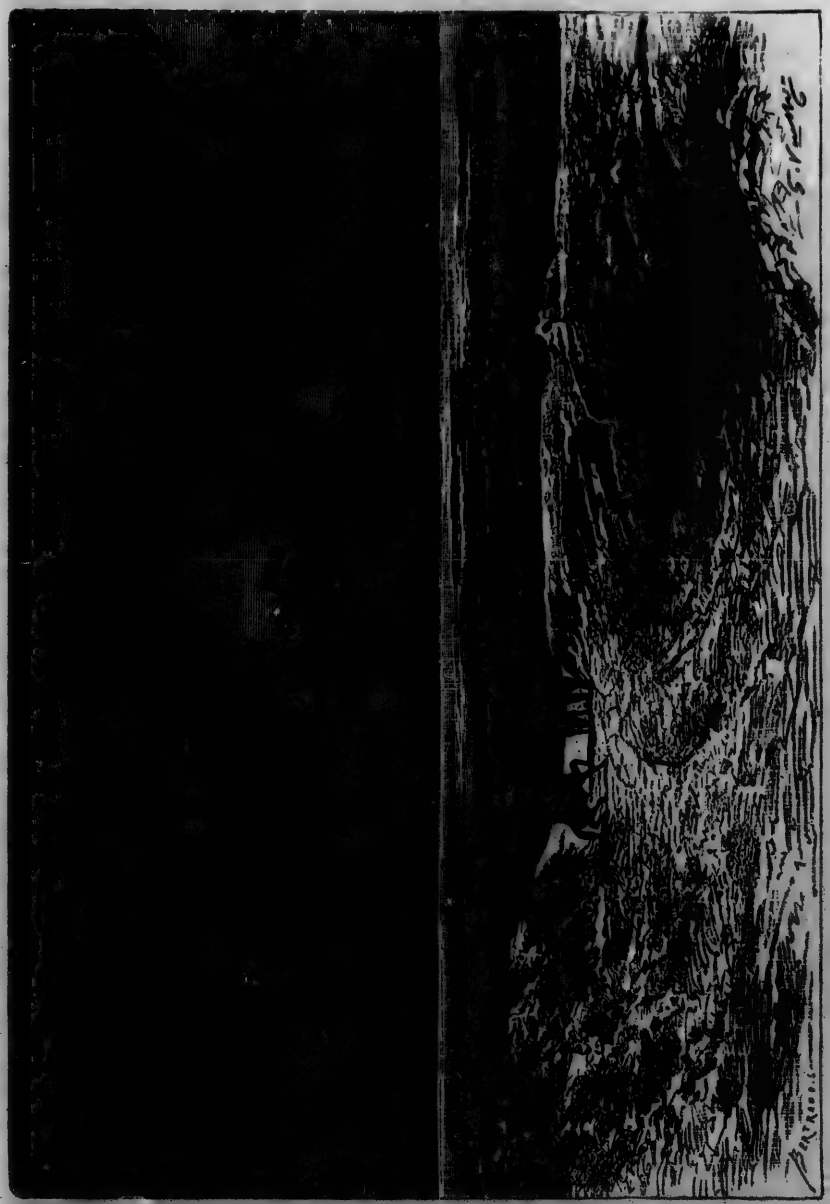
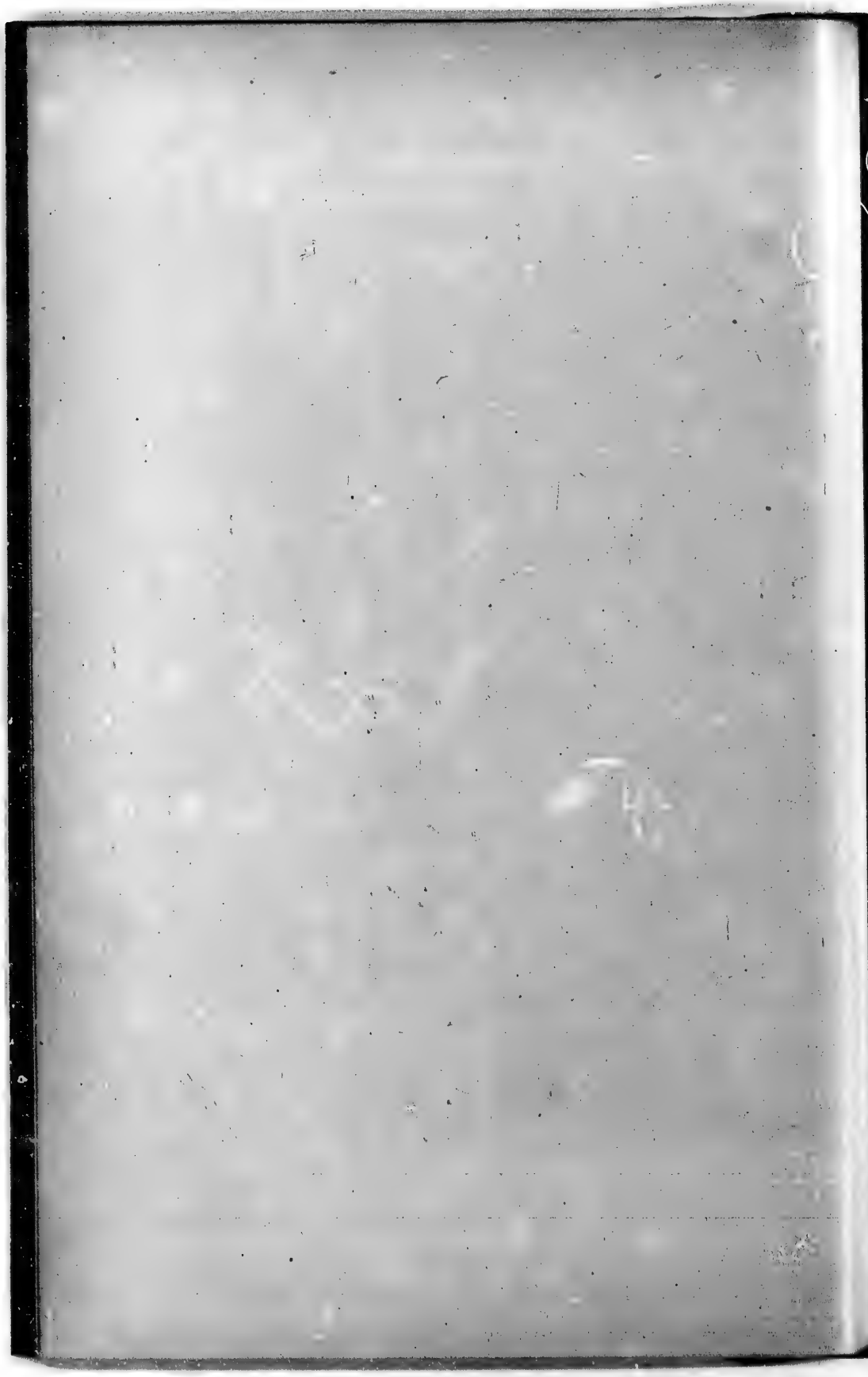


NAFTA AND THE SHOTT-EL-JERID.



the cultivable region, at the outlet of the mountains, between the sandy plain of Aamra and the approaches to the desert, was never at any time lost sight of; it forms the converging point of two zones, differing from each other both in appearance and populations. A kasbah, defended by guns, protects this frontier town against the incursions of the Hamâmma tribe; but the Tunisian soldiers are now replaced by those of France, and Gafsa has become the capital of a military subdivision.

The people of this town are well educated and, as in the Jerid, speak a much purer language than that employed on the coast. Columns, inscriptions, and ramparts recall the ancient Roman Capsa, and many a modern structure contains blocks of stone obtained from these ruins. South of the town stretches a plantation of over a hundred thousand palms, whose dense foliage overshadows an undergrowth of fruit-trees. These palms are loftier than those of Nafta, and yield a no less exquisite fruit. The water which nourishes the plantation yields a constant and copious supply, so that the people of the oasis have no need to fight for the possession of this precious stream. The three principal springs, ranging in temperature from 84° to 89° F., fall into basins of Roman construction, still known by the name of *termil*, and frequented by the Arabs, who bathe in its tepid waters, utilising the chambers excavated in the surrounding walls. These thermal waters contain a large quantity of fish of the *chromis* species, which by their characteristics are apparently related to exclusively marine varieties. Tortoises and black serpents, of the newly discovered *tropidonotus* family, are also found in the basins and streamlets of Gafsa. Like the other oases of southern Tunis, Gafsa is a busy centre of the weaving industry, and its linen and silken haïks, which are exported by the local Jewish traders, are justly admired in the Tunis market. The flocks of the Hamâmma tribe supply the people with the raw material from which they manufacture rugs and burnous.

A Roman road, rediscovered by Messrs. Rebatel and Tirant, connects Gafsa with the shores of the Syrtis Minor, traversing the fountains and the small oasis of El-Gwettar, the country of gum-trees, and the mineral springs of Bu-Hedma. Along the coast north of Cabes, follow in succession at long intervals camping-grounds and hamlets, in the territory of the Mehâdebas, who are the "peaceful descendants of a venerated marabut." The most important village on the coast is the now neglected little port of *Mahres*, whose inhabitants, scarcely a thousand in number, are mostly engaged in making esparto grass into mats and brooms. Beyond this point stands the village of *Bograra*, in the midst of the ruins of the Punico-Roman city of *Giethis*.

### Sfakes.

The second largest town of Tunis is *Sfakes* (*Sfaks*, *Sfax*), situated on the margin of the strait, about 30 miles broad, which separates the Kerkenna Archipelago from the mainland. Its population, which Pellissier calculated at eight thousand souls in 1848, appears to have more than tripled since that time. The people are crowded together in the lofty houses which skirt the narrow streets of the city,

and overflow into the new quarter which has been built along the beach outside the south-western ramparts. Viewed from afar, all that is visible of Sfakes are the white walls of its quadrangular enclosure and the tall minarets of its mosques. The towers, battlements, and angular bastions give the whole more of a mediæval aspect than is presented by any of the other fortified Tunisian towns. At the southern angle of the ramparts stands a citadel said to have been built by Christian slaves. Situated as it is, at a considerable elevation on a sloping ground, Sfakes has no permanent streams, nor even springs or wells, and all the water used in the town is drawn from numerous cisterns within and without the fortifications.

A few Roman remains are to be seen in the suburbs, but no inscription has yet been found which enables this town to be identified with any of the Roman stations mentioned by classical writers, although it most probably stands on the site of the ancient *Taphrura*. Some 12 miles to the south-west, on the shores of the gulf, is the ruined town of *Thiné*, evidently identical with the *Thina* of the Romans. This place stood at the extreme point of the ditch which Scipio the younger had excavated in the south of the Roman territory, in order to separate it from the country of the Numidians.

Some two or three thousand Jews and Europeans (Maltese, Italians, and French), dwell in Sfakes, nearly all in *Rabat*, or the lower town, where the trading interests are chiefly concentrated; a recently planted boulevard now connects this quarter with the camp situated north of the town. The Mussulmans live in the upper town, within the ramparts. The "Sfaksika," or people of Sfakes, differ in some respects from their Tunisian co-religionists, with whom they are unwilling to be identified. Hence they may be at once recognised by a special costume, although the chief difference lies in their mental characteristics. They are more enterprising, fonder of work, much more intelligent, and altogether more active and solid than their neighbours. They are said to be zealous Mussulmans, the very children frequenting the mosques, and the women never, as elsewhere, neglecting their prayers. At the time of the occupation of Tunis by the French troops in 1881, the Sfaksikas also gave proof of their patriotic spirit: almost single-handed they resisted the invasion, and fought desperately during the bombardment, which they might have easily avoided. Many of the institutions of Sfakes show the extent of the public spirit of the people; not only have they founded mosques and convents, but also a hospital, which is well supported. Outside the walls a central reservoir, called the "Help," is due to the munificence of one citizen. The "365" secondary cisterns which surround it disposed like the crypts of a necropolis, also bear witness to the brotherly feeling by which the rich are animated towards their poorer Mussulman brethren. Other vast reservoirs have been constructed in the suburbs of the town, and some houses are provided with an apparatus which enables the wayfarer to quench his thirst by drawing through an open pipe the water of a hidden cistern. A project is now in hand to construct an aqueduct some 36 miles long, which is intended to supply the town with water from the Bu-Hedma heights. The people of Sfakes show their love of work by their

agricultural labours, which, beyond a zone of sand surrounding the town like a circular road, have brought under cultivation an extent of land varying in breadth from 4 to 12 miles. Some years ago over 1,000,000 olive trees were planted round the town, and in 1874 the total yield of oil in the Sfakes district was estimated at upwards of 5,500,000 gallons.

In the outskirts there are said to be from eight to ten thousand enclosures, all separated from each other by cactus hedges, above which rise fruit-trees and a borj, or square tower, in which the proprietor keeps his implements, and which is strong enough to resist the attacks of marauders. The plain, bristling with thousands of these little forts, resembles the cultivated districts in North Persia, which are kept in a state of defence against the raids of the Turcomans. In summer nearly all these landowners dwell in their respective enclosures, leaving the town almost deserted.

Sfakes lies on the natural boundary between the olive and palm regions. These two trees are not found here in such great numbers as they are in the north and south respectively. But there are all the more fruit-trees of other varieties, such as the almond, fig, apricot, peach, pistachio nut, and vine; however, for some years past the culture of the olive, more profitable than all the others, has been on the increase. The zone of the olive plantations is yearly extended by several hundred yards, and if the same rate of progress continues, the Sfaksika will soon absorb in their gardens all the isolated clumps of olives which, having no recognised masters, are known as the "Bey's trees." Their plantations will then reach as far as El-Jem. Owing to the frequent rains, the fruit of the palms seldom ripens thoroughly, hence is mostly used as food for the animals. The vegetable most generally cultivated in the gardens of Sfakes is the *fakus*, or cucumber, a word from which the name of the town is supposed to be derived. According to Shaw, Sfakes is equivalent to the "City of Cucumbers."

Besides agriculture, the Sfaksika are also very actively engaged in industrial and commercial pursuits. They do not despise any description of work, like the Musulmans of so many other cities. The market of Sfakes is as well supplied with provisions as that of Tunis itself. The chief imports are wool, leather, and European merchandise, taken in exchange for oil, fruits of all kinds—grapes, figs, and almonds—sponges and dried fish, obtained from the Kerkenna fishermen. Of late years English vessels also visit this port to take in cargoes of alfa grass, which is gathered in the western plains and valleys inhabited by the peaceful Metâlit and Nefet Arab tribes. Unfortunately, Sfakes has no port in which to receive vessels of any size. Hence ships of large draught are compelled to anchor at a distance of nearly 2 miles from the shore. Smaller craft are able to approach close to the town with the rising tide, which at ebb leaves them high and dry on the mud. The harbour, however, is perfectly safe, being well protected from the east winds by shallows and the Kerkenna Archipelago.

This group has no centres of population beyond a few villages and hamlets inhabited by fishermen. Hannibal and Marius found a temporary refuge in these islands, which were used as places of exile under the Roman Government, and

until recently by that of the Bey. For some time past the natives of Kerkenna have cultivated the vine, and freely drink of its fruit, notwithstanding the precepts of the Koran.

While the coastland route runs north-eastwards, skirting the Ras Kapudiah, the most easterly promontory of Tunis, the route from Sfakes to Susa—that is, the ancient Roman road—pursues a northerly direction across the territory of the Metâlit tribe. Towards the middle of this route stood the two important towns of *Bararus* and *Thysdrus*, which have now become the *henshir* or "farm" of *Ruga*, and the wretched village of *El-Jem*. The ruins of Bararus cover a space of about 3 miles in circumference, and comprise the remains of a theatre, a triumphal arch, and other edifices, whilst Thysdrus still possesses one of the finest monuments in the whole of Africa, the best-preserved amphitheatre which has been left us by the ancient world, not even excepting that of Pompeii itself. When this region of Tunis, at present almost uninhabited, supported a numerous population, the central position of Thysdrus rendered it one of the best sites for celebrating public feasts and games. From all parts visitors flocked to its great amphitheatre, which is supposed to have been, if not built, at least founded by Gordian the elder, in return for having been proclaimed emperor in the city of Thysdrus. The amphitheatre was also the spot where the chiefs and delegates of the southern Tunisian tribes met in 1881 and decided on a general rising against the French. Visible for a distance of 6 miles from all points of the compass, this vast pile towers above a broad isolated eminence itself rising 615 feet above the surrounding plain. Looking at a distance like a mountain of stone, on a nearer approach it disappears behind the thickets of tall Barbary fig-trees, between which the path winds. According to the measurements of M. Pascal Coste, the Coliseum of Thysdrus, one of the vastest of the Roman world, has a total length of 500 feet in its longer axis, and 430 feet in its shorter axis, which is disposed nearly due north and south. It was probably modelled after the Flavian amphitheatre in Rome. The elliptical façade, formerly composed of sixty-eight arcades, supported three stories ornamented with Corinthian columns, and presents in its general design a great unity of style. But it is no longer complete. In 1710, after an Arab insurrection, Mohammed, Bey of Tunis, blew up five arcades on the east side, and since then the breach has been incessantly widened by the Metâlit tribe of El-Jem, who use the materials of the amphitheatre in the construction of their wretched dwellings, besides selling them to the builders of the surrounding district. Inside, the rows of seats have mostly disappeared, and their remains have fallen in confused heaps on the arena. This havoc has been attributed to the transformation to which it was subjected by the famous *Kahina*, or "Priestess," who converted it into a stronghold against the Arab invaders in the year 689. The traditions of the neighbouring tribes, which commemorate the glories of the Priestess, although she was hostile to the Arabs, relate that this heroine, probably a Jewess, like so many other Berbers of that period, placed herself at the head of her fellow-countrymen and of their Greek allies. Forced to shut herself up in the amphitheatre, which from her took the name of Kasr-el-Kahina, she here sustained a siege of three

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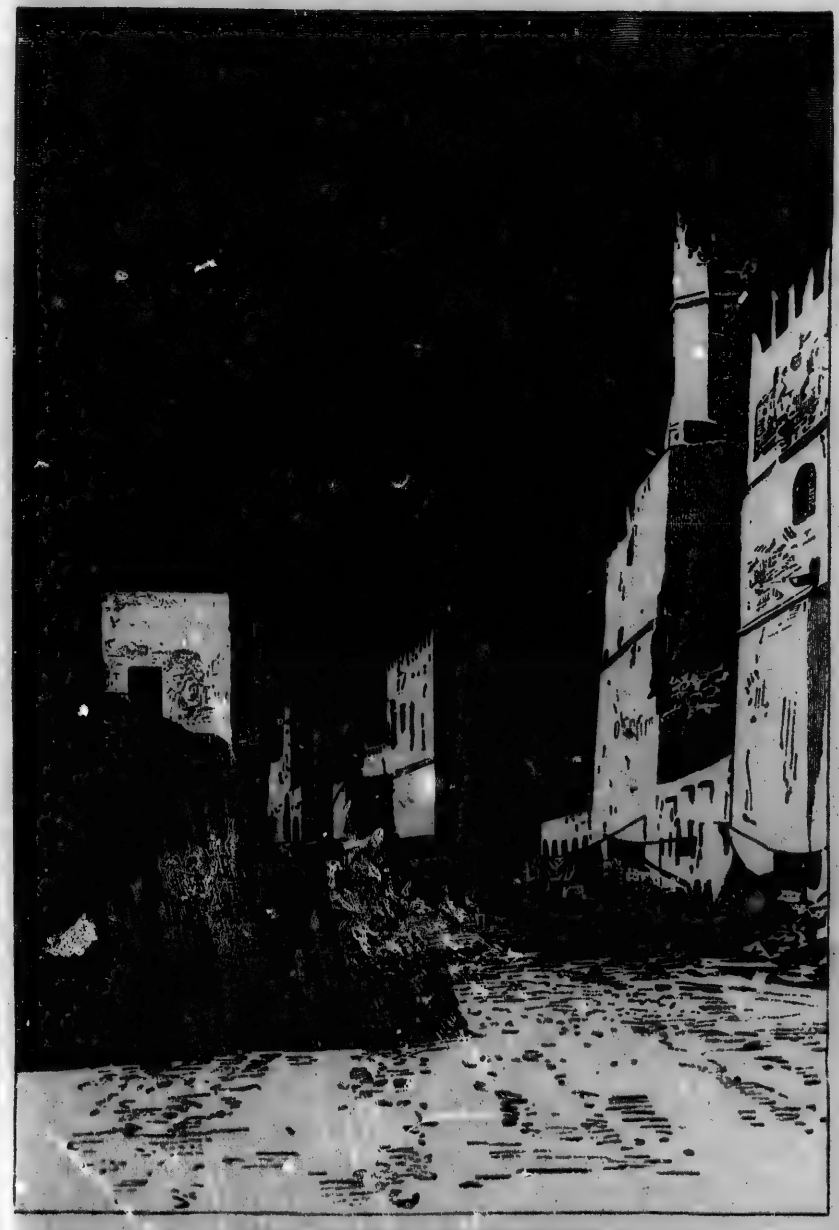


STAKES—VIEW TAKEN IN THE LEONEC STREET.

years. A subterranean passage by which the arena was flooded for the naval engagements of the Roman games is pointed out by the Arabs as the remains of a secret gallery by which the garrison communicated with the coast and received its supplies.

The town itself has left but few ruins, but excavations have brought to light columns of vast size, and deep cisterns. According to M. Rouire, the nomads of this region are gradually displacing the settled populations. Every village deserted by its inhabitants is immediately seized by the native Beduins, who make it their chief market and remove thither the shrines of their saints.

According to the Metâlit people, the sandstone employed in the construction of

Fig. 45.—The Amphitheatre of El-Jem, viewed from the Ruined Side.

the amphitheatre was obtained from the quarries of *Bu-Rejid*, situated on the seashore, not far south of *Mahdiya* (*Mahdia, Mehedia*), the "City of the Mahdi," so called after its founder or restorer, Obeid Allah, in the year 912. Mahdiya soon became an important place, thanks to its strong military position. The Christian seafarers for a long time called it Afrika, regarding it as pre-eminently the stronghold of the continent. Hence it was subjected to frequent attacks. In 1147 the Norman, Roger of Sicily, obtained possession of it, but it was retaken by the Mohammedans thirteen years later. In 1557 Charles V. captured the place after several sanguinary assaults, and caused the ramparts to be dismantled. From that time forward the walls have never been repaired and the breaches have

grown wider. The fort, which defended the narrow isthmus connecting the peninsula with the mainland, is now a mere ruin. The two inlets are said to have been formerly united by a canal. The ancient port, excavated by human hands, like those of Utica and Carthage, is now choked with rubbish, and the vessels which come to take in cargoes of oil, fruits, and sponges are obliged to anchor in the roadstead. A foreign colony, composed, as in all the other coastland towns, of Maltese, Italians, and Frenchmen, has been established at Mahdiya, and is engaged in the export trade and the sardine fishery. Over two hundred boats are now occasionally crowded in the harbour. From May to July the sea on this coast teems with fish to such an extent that each boat takes on an average from two to three hundred kilogrammes of sardines in a single night. In order to fish in the day, the native sailors spread mats of alfa grass on the water, beneath the shadow of which the fish flock in shoals. The fishermen then cautiously approach and cast their nets round the space covered by the mats and the fish concealed beneath them.

To the south-west, in a well-cultivated district, some distance from the sea, stands the village of *Kur-es-Sef*, which is a larger place than Mahdiya. At this port is shipped nearly all the produce exported by the merchants of the ancient "Afrika."

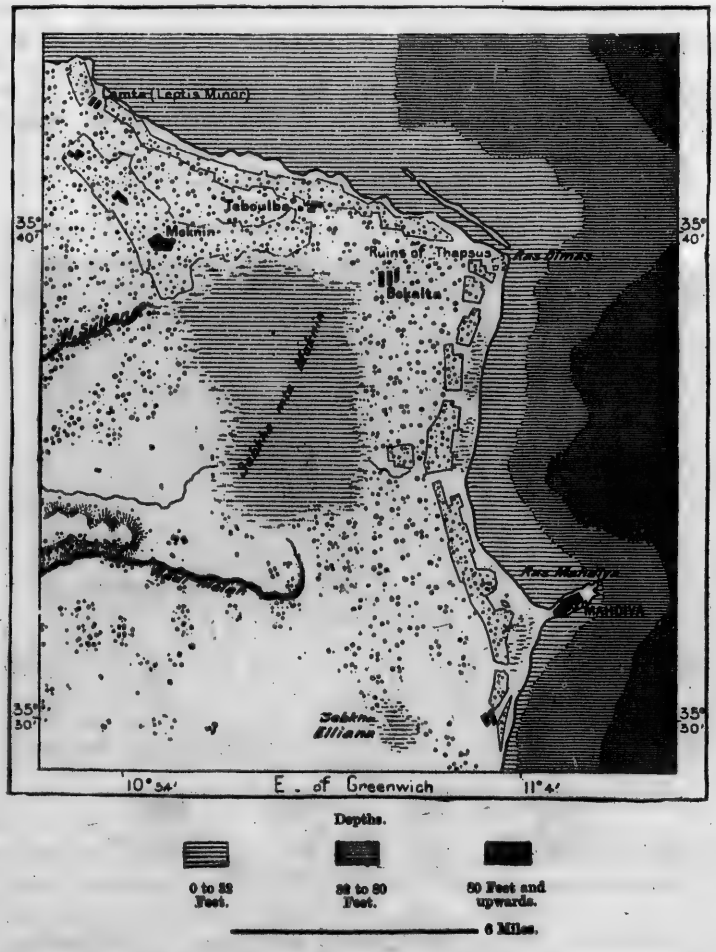
A few miles west of Mahdiya, covering a space of several square miles, stands an ancient necropolis, whose tombs, hollowed out of the rock, have been compared by M. Renan to those of Arad in Syria; nor can there be any doubt that a Phœnician town once stood on this spot. The surrounding region is one of those in which ruined cities are found crowded in the closest proximity together. Some two miles to the south the *Henshir Selekta* occupies the site of *Syllectum*, and farther on, near the Ras Kapudiah, the Caput Vada of the Romans, a borj now stands where was formerly the Byzantine city of *Justinianopolis*. To the north, on the promontory of Ras Dimas, where there is a port protected by the remains of a jetty, ancient stone ramparts, cisterns, and the elliptical wall of an amphitheatre, whose arena is now cultivated, indicate, near *Bokalta*, the site of the Carthaginian city of *Thapsus*, celebrated for the victory which Cæsar here gained over Scipio and King Juba.

Beyond this point, on that part of the coast which faces the Kuriatein Islands, the villages of *Tebulba* and *Moknin*, surrounded by secular olive-trees, also occupy the sites of ancient cities. The coastland route then passes on to *Lemta*, a village which has succeeded to *Leptis Minor*, or "Little Leptis," so called in contradistinction to the "Great Leptis" of Tripoli. Still, Leptis Minor was once a considerable city: its ruins stretch along the sea-shore for nearly three miles, and here are still to be seen remains of an aqueduct, an amphitheatre, quays, and jetties. The ancient port is now a mere wed, known as the Wed-es-Sak, or "Valley of the Market." The most populous town of this district at present is Jemâl, built farther inland, to the south-west of Lemta.

*Monastir*, or *Mistir*, by its name recalls, perhaps, what was once a Christian monastery; but it had also been a Carthaginian and Roman town, probably *Ruspina, i.e.* "the Head of the Promontory." Like Sfakes, it is surrounded by an

embattled wall flanked with towers; above the ramparts appear the domes and minarets of numerous mosques, surrounded by a magnificent olive grove. It was also till recently peopled by Mussulman fanatics, who would not tolerate any other religion in their town but their own; but, being now visited by a regular service

Fig. 46.—Mahdiya.
Scale 1 : 240,000.




of steamboats, its colony of Europeans is slowly increasing. It is the cleanest and best regulated town in the whole of Tunis.

Not far from the promontory, of which Monastir occupies the western angle, is a small group of islands, one of which is pierced with some fifty artificial grottoes,

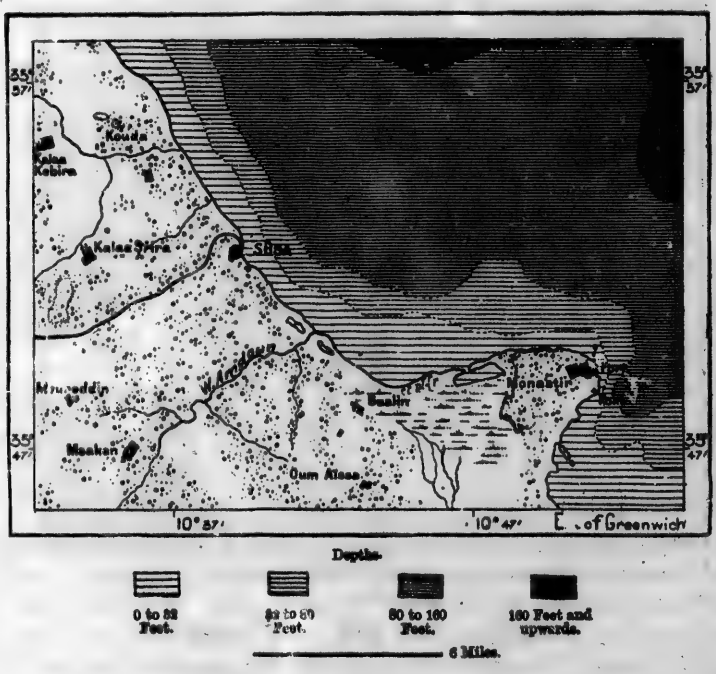
probably of Phœnician origin. They recently served as places of shelter to the tunny-fishers, and have occasionally been used as places for keeping sailors and travellers in quarantine. Farther east, the group of Kuriatein Islands, which is connected with Cape Dimas by a submarine bank, is, according to Tissot, the remnant of a considerable tract of land, which was still in existence at the Punic period; however, the documents on which this hypothesis is founded are not definite enough to lend much value to the statement.

## Sûsa, Kairwan.

*Sûsa*, the principal city of the Tunisian Sahel, is considered to be the second town of Tunis, if not for the number of its inhabitants, being in this respect sur-

Fig. 47.—Monastir and Sûsa.

Scale 1 : 220,000.




passed by Sfakes, at least for its strategical importance. A large part of the surrounding territory is under cultivation, and nearly all the natives dwell in fixed abodes. Sûsa, which is of Phœnician origin, is the port of Kairwan, the principal city and military centre of the interior, and was itself, at one time, also a capital city. Under the name of *Hadrumetum*, it was in the time of the Romans the chief town of the province of Byzacena, and its wealth and military position exposed it

to frequent attacks from foreign invaders. Vandals, Arabs, Spaniards, and French successively assaulted, destroyed, or bombarded it, and the ruins of different periods have thus been piled up in successive heaps. Blocks, and other remains, covered with carvings and inscriptions, have been used in building modern houses; but there are no traces to be found of the great edifices, such as the amphitheatre spoken of by the Arab authors of the Middle Ages. The *Hajar Maklubah*, or "Overturned Stone," once a magnificent temple, is now a mere heap of rubbish, while the "cothon," or circular port of the Carthaginians, which was similar to those of Carthage and Utica, can be recognised only by the remains of its two extreme

Fig. 48.—KAIRWAN.

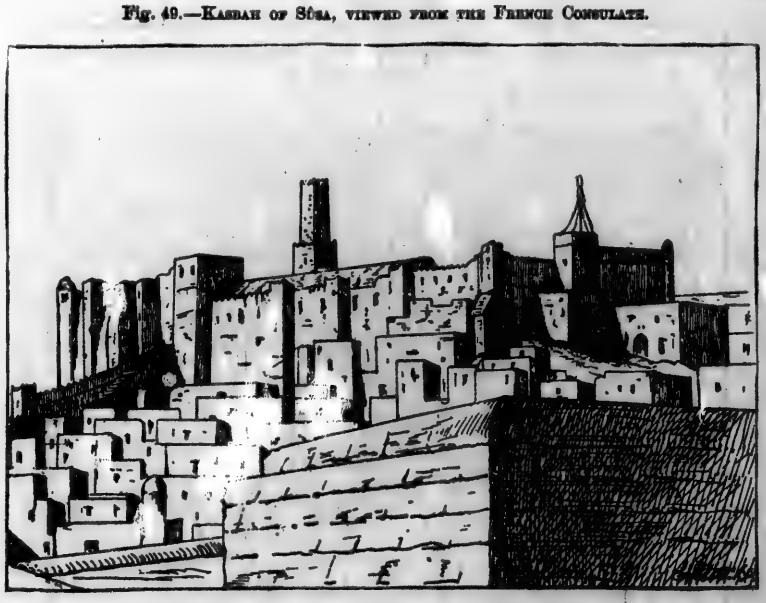
Scale 1 : 20,000.

sluice-gates—huge blocks of masonry which at a distance look like rocks. The greater part of these works has been pulled down and turned into an esplanade. As in nearly all the ancient towns of Tunis, the cisterns, more precious than all other structures, have been always either kept up or repaired under every change of Government. The necropoli of various periods form an almost complete circle round the town. The most ancient, in which sepulchral chambers are still to be seen hollowed out of the soft limestone, are similar in the internal arrangements of their galleries to the caves used as tombs in Phœnicia and Palestine. The city was supplied with water by a Roman cistern.

Like other towns of Eastern Tunis, modern Sûsa is surrounded by huge quadrilateral ramparts, flanked with towers, and commanded at one of its angles by a kasbah. Altogether, the city is about one mile in circumference; but outside the enclosure, comprising a network of winding streets, is a newly opened quarter in the north-east, near the beach, which, however, lacks the picturesque appearance of the old town. Here are the depôts of the Jewish and European merchants, with their reservoirs of oil, which is exported to Marseilles for the manufacture of soap.

Olive-trees can be counted by the million in the Sahel of Sûsa, and the plantations could even be still farther increased, although in some places the sand is allowed to encroach on the cultivated districts. Till recently, the casks of oil

Fig. 49.—Kasbah of Sûsa, viewed from the French Consulate.



which the Sûsa merchants supplied to the vessels in the roadstead were floated, and towed down by flat boats in long convoys. On the return voyage the casks were thrown overboard, washed ashore by the surf, and recovered by their owners. Now, however, a small jetty receives the travellers and merchandise landed from the boats or rafts. Sicilian sloops fish for sardines off the coast of Sûsa, and the produce, as abundant as in the waters of Mahdiya, is exported to Greece and Dalmatia.

Italians and Maltese, always very numerous at Sûsa, till recently constituted nearly all the European population of the town; but the majority of the non-Mussulmans were Jews, who numbered some two thousand, and who enjoyed a monopoly of the inland trade. Hundreds of Negroes, the sons of former slaves, carry on the

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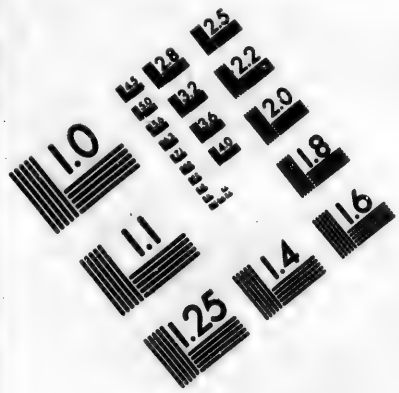


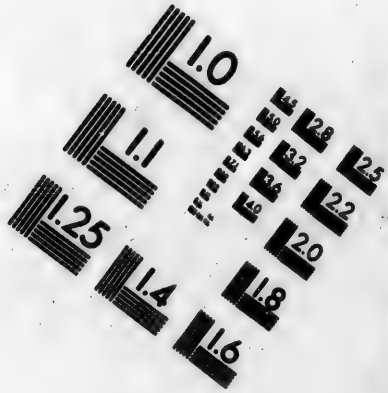


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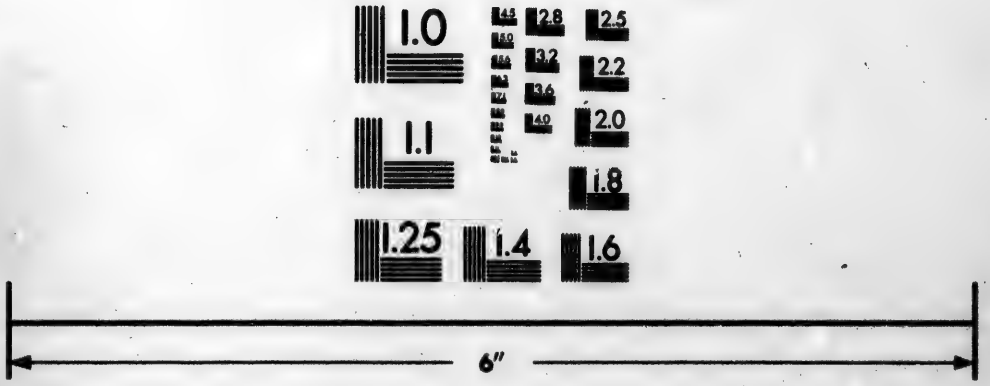


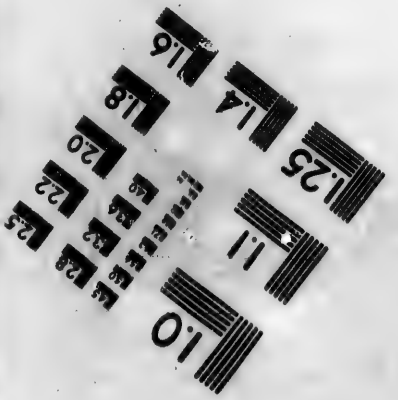


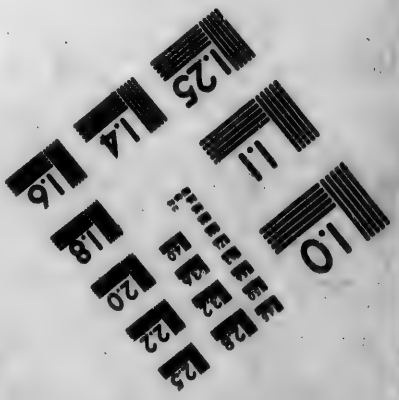


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trades of masons, joiners, and house-painters. Since the French occupation, former Algerian riflemen, Kabylès and Arabs, have also come to seek their fortunes at Sûsa, where, thanks to their knowledge of French, they readily find employment as interpreters and foremen. The Sûsa Mussulmans, amongst whom fair types with blue eyes are by no means rare, vehemently declare that they are not Arabs, but natives of Sûsa.

Amongst the flourishing towns of the environs there are some which contain, in their scattered quarters, a population equal or but slightly inferior to that of Sûsa itself. One of these places is *Kelaa Kebira*, some 8 miles to the north-west; another is *Mdâken*, about 6 miles to the south-west, and surrounded by a dense forest of olives. This latter was, till quite recently, a holy place, which Jews and Christians were forbidden to enter.

A tramway on the Decauville system, laid over rugged wastes, hills, valleys and sebkhas, connects the shores of Sûsa with *Kairwan*, the religious capital of Tunis, which stands on a terrace commanding an extensive view of a slightly undulated treeless district. Founded by the conqueror Okbah in the year 671, at the period of the first Arab invasion of Maghreb, the city of the "Double Victory" has retained a great prestige in the eyes of the Mussulmans, and pilgrimages made to the pretended tomb of its founder are considered to have a special efficacy in purifying the souls of the Faithful. Kairwan is one of the four "Gates of Paradise," and "seven days' stay at Kairwan are equivalent to one day at Mecca," entitling the pilgrim to be called a haji. The legend relates that, before founding the town, Sidi-el-Okbah proclaimed to all the beasts of the field that a sacred city was about to rise on this spot, and for three days the lions, panthers, wild boars, and other wild animals, both great and small, quitted the place in troops, leaving it free to the followers of the Prophet. The legend also says that impure men cannot live in this holy city, the spirits of the blessed would destroy them if they ventured near the mosques. The Jews being forbidden to reside in the town, their *hara*, or quarter, stood at a distance of over a mile from the walls. A certain number of Christians, however, protected by a letter from the Bey, were admitted into Kairwan and politely received by the sheikhs, but they were never allowed to enter the sacred edifices. While all the cities of the Tunisian coast had been successively visited by victorious foreign armies, Kairwan was captured for the first time in 1881 by the French. On this occasion, however, the town threw open its gates without attempting a useless resistance. Since then it has become the capital of a military government, and its ramparts, commanded by a kasbah, have been completed by new bastions. Christians now freely enter its mosques.

Of all Tunisian cities, Kairwan, surrounded by ruins, barren tracts, and saline depressions, is one of those which nature has favoured the least; it has neither running waters nor springs, all the water coming from cisterns, some of which are flushed at the period of continuous rains by the Wed Merg-el-Lil, whose current becomes clearer from basin to basin. The city has no shady gardens, being surrounded by more cemeteries than cultivated lands. Thanks to its central position, it nevertheless presents at first sight an imposing and even pleasing appearance.

Viewed from afar, it commands the surrounding space with its lofty walls, the numerous cupolas of its mosques, and the superb three-storied minaret which stands north-east of the town, above the mosque of Sidi-Okbah. Tunis itself does not boast of such wealthy mosques and convents as this holy city, which possesses over eighty of these religious edifices. Amongst them is the Jemâa-el-Kebir, or "Great Mosque," which has no less than seventeen double parallel naves, and more than 400 columns of onyx, porphyry, marble, and other precious materials. Still more famous than the Great Mosque is that of the "Companion," so called because it contains, in a recess ornamented with marvellous arabesques, the tomb of a com-

Fig. 50.—Kairwan: The Mosque of the Swords.

panion of Mohammed, his barber, and also a still more precious relic—three hairs from the Prophet's beard.

The most powerful brotherhoods at Kairwan are those of the Aïssawa, the Tijaniya, and the Ghilaniya. Like so many other "holy places," Kairwan is also one of the most corrupt, and the class of the Tunisian dancing girls is mainly recruited from this city of mosques and religious confraternities. The inhabitants of the city of Okbah glory in living, as parasites, at the expense of the Faithful; they have consequently greatly degenerated, and are mostly afflicted by zymotic diseases. Cancer, scrofula, and infirmities of every description give the people a

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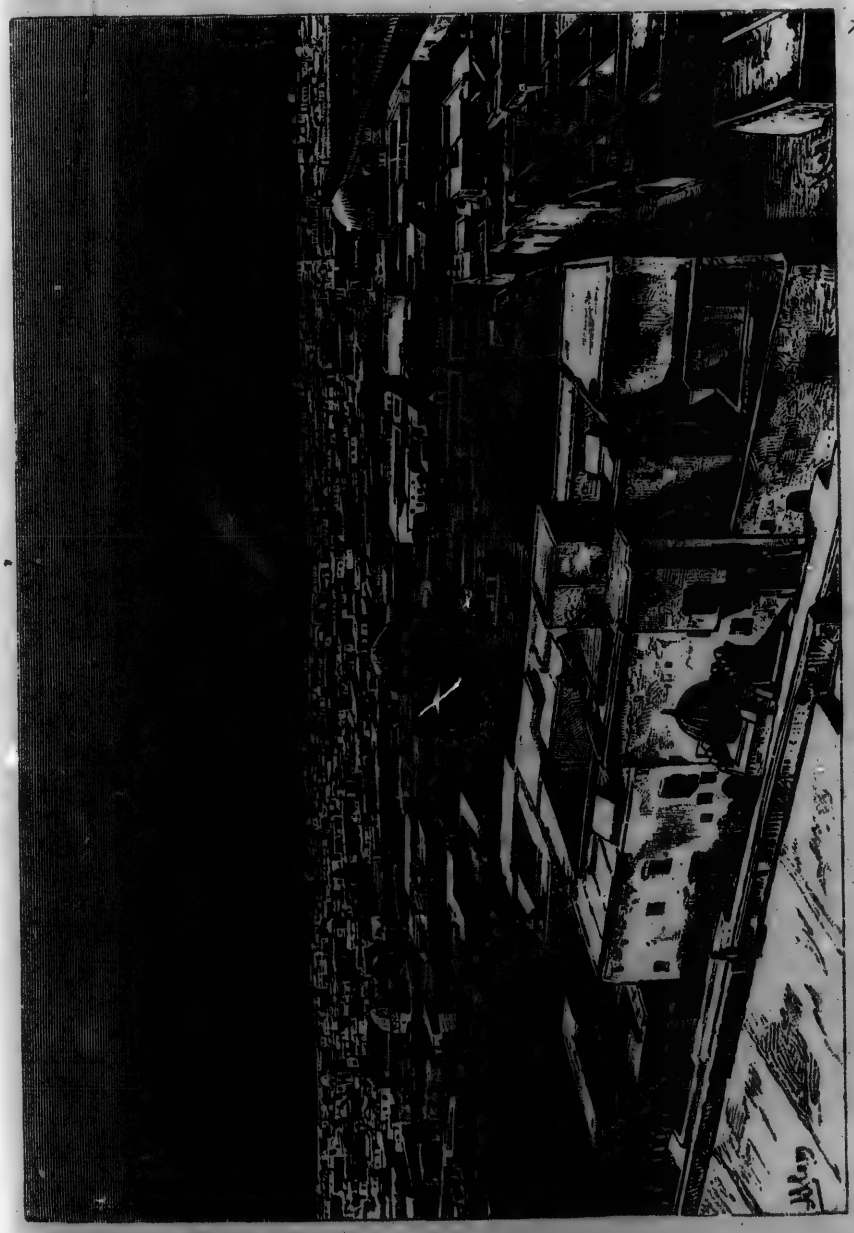
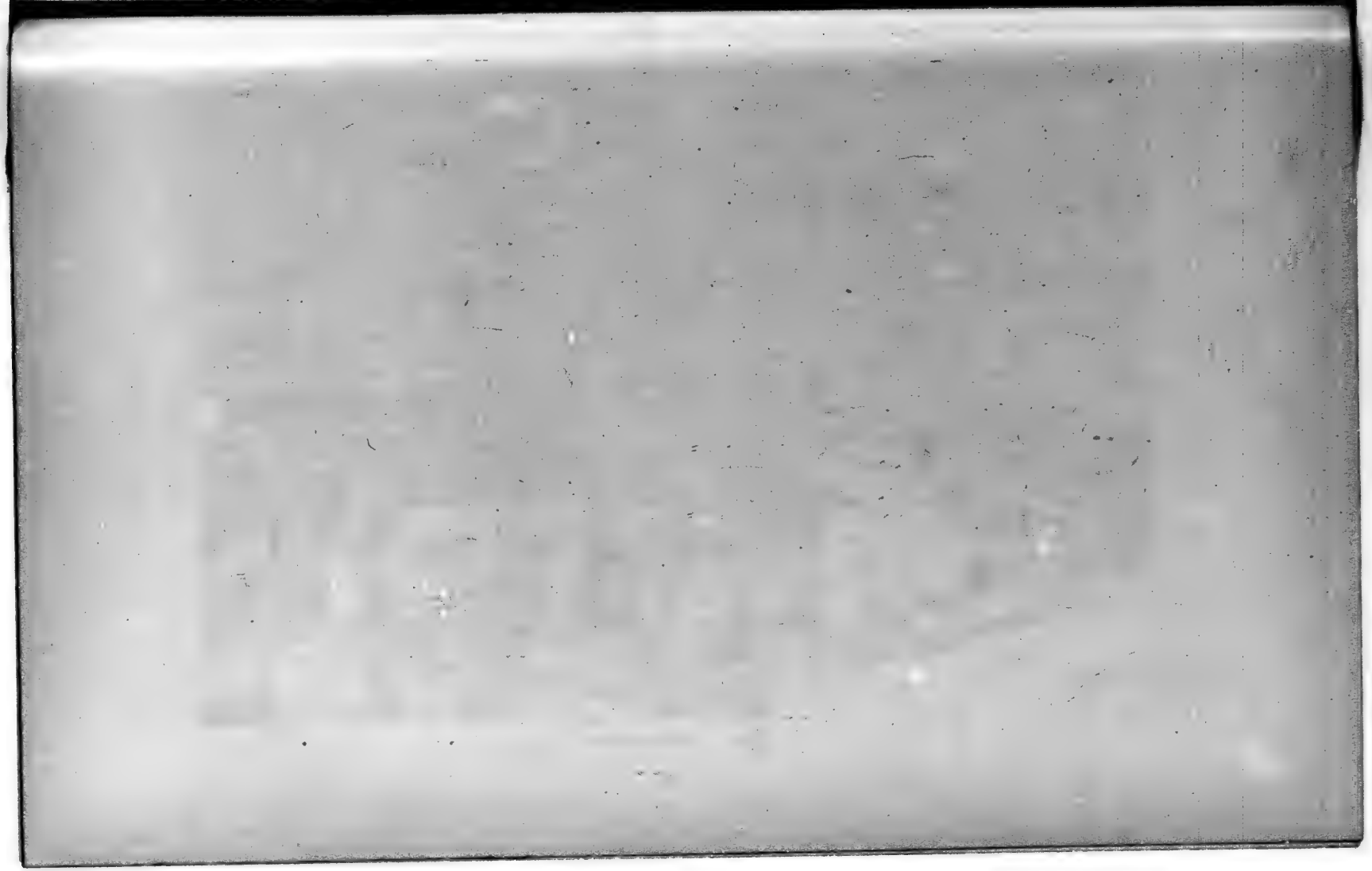


GENERAL VIEW OF KAIRWAN.



repulsive appearance; they have no strength for work, just as they had no energy to resist the French. However, the town has a few industries, more especially manufactories of embroidered saddles, chased copper vases, and attar of roses; its bazaars are amongst the best stocked in Tunis. But provisions of all kinds have to be brought from a great distance; vegetables and cereals being imported from Hammamet, some 60 miles distant.

There are no other towns in the district of Kairwan, and all that remains of the ancient *Sabra*, which stood about a mile to the south, are two pink columns, which "shed blood" under the saws of the workmen. The traveller passes, without transition, from the scenes of city to those of rural life. All the surrounding peoples are partially or completely nomads, either of Arab or Berber stock. Amongst the latter is the powerful Zlas tribe, south and west of Kairwan, who are said to number thirty thousand, and who occupy the western suburb of that place.

The Sûsa Arabs live to the east, around the depressions in which are collected the waters of the Sidi-el-Hâni sebkha, whence they extract large quantities of salt. This is piled up in great heaps, on the top of which they burn brushwood, in order by the fusion of the upper layers to form a solid crust, which prevents the salt from being dissolved by the rains. To the north-west are the camping-grounds of the Ulad Yahiya, and to the west, near the sources of the rivers falling into lake Kelbia, those of the Mâjer tribe.

The region now traversed by these semi-Arab Berber nomads is one of those most densely inhabited by settled communities some two thousand years ago. The upper basin of the Wed-el-Fekka, a watercourse which changes its name at each successive confluence, lies in a district of Tunis where Roman remains occur in the greatest abundance. The huge cities and their sumptuous monuments have everywhere left ruins which, throughout eastern Maghreb, are called *henshirs*, a term equally applied to all lands under cultivation. *Kasrin*, the ancient *Scyllium*, whose remains cover several hills, still preserves a three-storied mausoleum with Corinthian pilasters, besides a triumphal arch and many other buildings, which have not been so well preserved. Near this spot the railway from Cabes to Tebessa will pass under two ancient triumphal arches.

East of Kasrin the Sbeïtla henshir, commanded by the Jebel of the same name, and traversed by the Wed Menasser, an affluent of the Fekka, has also preserved some magnificent monuments of the Roman period. When M. Guérin visited this henshir it was inhabited by a solitary priest, who, to the traveller's surprise, proved to be a Frenchman! Several thermal springs which rise in a dried-up bed near Sbeïtla, are sufficiently copious to form a clear streamlet, as large in volume as the springs of Zaghwan. The water yielded by it suffices for a considerable population, and everything, in fact, tends to prove that this now deserted region was very populous some two or three thousand years ago. The ancient *Suffetula*, that is, in Carthaginian, "the town of the Suffetes," was an important city and the seat of the government of the province till the Arab invasions. The temples, colonnades, triumphal arches, ramparts, towers, and tombs with inscriptions have enabled archæologists to discover the ground-plan of the town. An imposing temple, with

two projecting wings surrounded by elegant columns, crowns a neighbouring eminence. The space before the triple sanctuary was approached through a triumphal arch ornamented, like the temple, with beautiful sculptures, similar to the decorations of the temples of Baalbek. The whole of this region, covered with Roman ruins, appears to have been a vast forest of olives; near each building are also still visible cisterns and fortalices, whither the settlers took refuge at any sudden alarm. At the present time this olive country, over which roam the Frashish tribe, yields no other produce except the wool of its sheep, which, however, is the most valued in all Tunis.

North of Susa the coast route, confined between the lagoons and the sea, traverses the village of *Hergla*, which now shows no traces of the Roman period, except in its ancient name of *Horrea Cœlia*, and some shapeless ruins. The surface of a neighbouring plain is covered with dolmens for a space of about one square mile. Beyond this spot, near the peak of *Takruna*, on which stands the village of the same name, lies the farm of *Dar-el-Bey*, or "the Bey's Palace," centre of the vast Enfida domain belonging to the Ulâd-Saïd tribe, which was so long disputed by rival speculating companies, backed up by their respective governments. The annexation of Tunis to France terminated the contest to the advantage of a society from Marseilles, to which other domains have also been conceded.

This immense tract, which although not yet surveyed, can scarcely comprise less than 300,000 acres, includes lands of a very varied nature, some arid, others fertile, but on the whole constituting one of the most favoured regions of Tunis. Under the Roman government, this portion of Byzacena is said to have contained no less than seventeen towns, whose ruins are still met scattered amid the surrounding brushwood. At present not more than three hamlets, peopled with Berber peasantry, occupy the crests of the hills, and a Maltese village has been recently established 6 miles to the north of Dar-el-Bey. Certain parts of this region are planted with olive groves stretching away beyond the horizon; and other tracts, abundantly watered, might be utilised as gardens. Extensive plains are here covered with cereals; forests of pines and thuya clothe the slopes of Mount Zaghwan, and the pasture lands are pre-eminently fitted for sheep-breeding. The greatest efforts have recently been made to promote this industry, by introducing Algerian stock, and also to increase the vine plantations; but unfortunately this work of improvement has its drawbacks, due to the interference of managers and foreign capitalists, which have not failed to arise in this region of Tunis as well as in all the other *latifundia*. The interest exacted by money-lenders, the expenses of commission, the employment of useless middlemen, the dearness of labour, and the hostility of the injured natives, always ruin enterprises of this description, or at least prevent them from producing in a proportion equal to that of small properties cultivated by the owner himself. To prevent the failure of their speculation, the grantees of the Enfida estate have been obliged to give up personally directing the work of cultivation; like the Arab suzerains, they content themselves with letting their lands to the surrounding peasants and shepherds. The rent of these lands is little more than 1s. 8d. per acre, a deduction being made for tracts

covered with scrub. The work, which had been hailed as the commencement of a

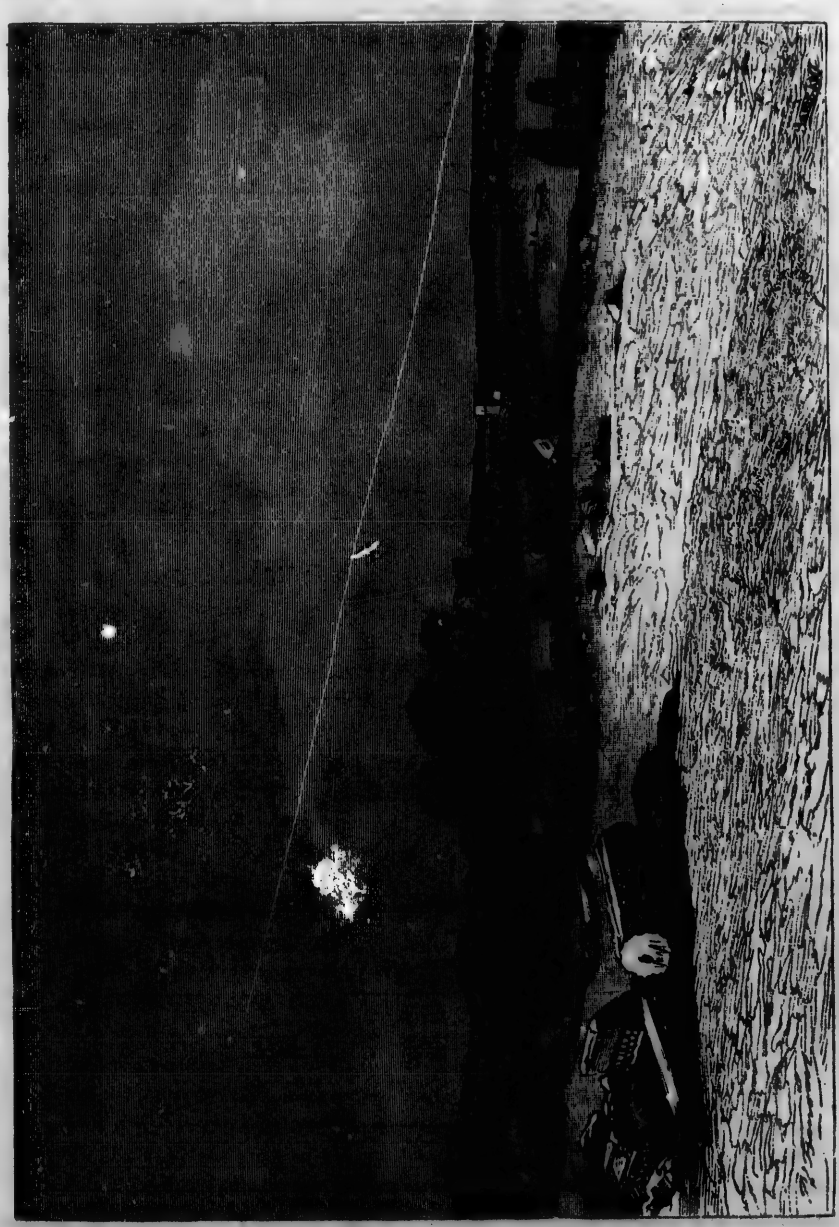
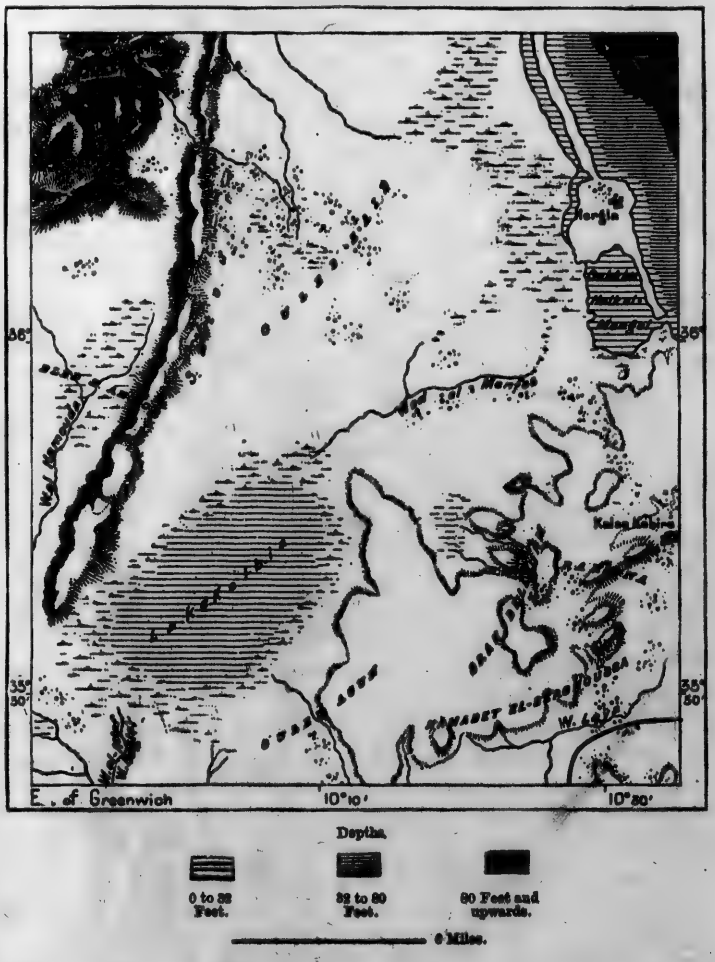


Fig. 61.—Ruins of Sbeitla, the Ancient Sufetula.

new era in the civilisation of Tunis, is now confined to signing leases and collecting the rent. Enfida is very rich in mineral and thermal springs.

The little village of *Hammamet*, called "the City of Pigeons" on account of the innumerable ring-doves which nest in the rocks of the neighbouring mountains, has given its name to the broad gulf between the Cape Bon peninsula and Monastir Point. It owes this honour neither to its antiquity, since it was founded

Fig. 52.—Sûsa and Enfida.
Scale 1 : 380,000.




only in the fifteenth century, nor to its wealth, for it has but a small population, while the surrounding district is badly cultivated, but rather to the effect produced by its white walls flanked with square towers partly built into the masonry, and to its position, exactly at the southern extremity of the route which traverses the

neck of the north-eastern peninsula of Tunis. These advantages have endowed it with a certain strategical importance, and made it an indispensable station for traders and travellers. At this point travellers coming from Tunis reach the shores of the eastern sea, and they have naturally named the bay after the place where the inland route terminates.

But industrial and commercial life has moved farther east to the town of *Nabel*, which dates from pre-Arab times, as is indicated by its slightly modified Greek name of *Neapolis*. Notwithstanding this designation of "New Town," it is a place of vast antiquity. In the ruins of *Nabel-el-Kedim*, or "Old Nabel," are still found traces of Carthaginian structures, and the Periplus of Scylax already mentions this African "Naples." The soil of the plain, where a "new town" constantly sprang up on the ruins of its predecessor, is strewn with potsherds and broken vases, and at the present time numerous workshops are still surrounded with broken utensils, similar to those rejected by the old potters of Neapolis, showing that the local industry has undergone no change for the last two thousand years. From Nabel more especially come the waterbottles, pitchers, jars, flower-pots, perfume-vases, and terra-cotta lamps which are sold in the markets of Tunis, and which even find their way to Algeria and Tripoli. Nabel also manufactures textile fabrics, while the flowers of its gardens are used in the preparation of essences.

Of late years Nabel has acquired a certain reputation as a "winter retreat" for consumptive patients. Well protected from the northern winds by the hills of the north-eastern peninsula, it faces the Gulf of Hammamet, which is seldom tempest-tossed like the waters on the northern side of the headland. Hence the streets are seldom exposed to the furious blasts which raise clouds of dust on the highroads of Tunis. North of Hammamet, the Vandal kings had a "Paradise;" but where once stood those magnificent pleasure grounds, scarcely a tree is now to be seen. The sand daily encroaches more and more upon the surrounding plantations and cemeteries.

One of the most populous regions of Tunis is the Dakhelat-el-Mahuin, as the peninsula terminating the Râs Addar is called. Small towns and large villages surrounded by gardens, orchards, and olive groves, follow in succession along the high cliffs, at some distance from the eastern coast. The shore route traverses *Beni-Khriar*, *Kurba*, *Kurshin*, *Mensel-Temin*, and *Kelibia*, this latter the successor of the ancient *Clypea*, in Greek Aspis, so called from the shield-shaped hill on which stood the acropolis. Situated near a cape, at the point where the coast curves to the south-west, thus offering a refuge for vessels against the north winds, Kelibia was always of some maritime importance, and, although its two ports are now choked up, small craft overtaken by tempests still seek shelter under its walls. The north side of the peninsula washed by the waters of the Gulf of Tunis is less densely peopled than the opposite side, owing to the narrowness of the cultivable zone comprised between the hills and the sea. *Soliman*, and the mensel or "station" called *Mensel-Bu-Zalfa*, the largest centres of population, are situated in the northern part of the plain which connects the shores of the Gulf of Tunis

with those of the Gulf of Hammamet. The inhabitants of Soliman are of Andalusian origin, like those of several other towns of Dakhelat-el-Mahuin, and, according to Grenville Temple, many still retain the names of Spanish families. The plague of 1819 swept away more than two-thirds of the population of Soliman.

The seven thermal springs of *Hammam Kurbes* (*Gorbus*), whose temperature (from 77° to 138° F.) is higher than any others in Tunis, rise on the coast not far from the promontory called Ras Fortas, exactly opposite Cape Carthage. About a dozen other boiling springs, visible from afar by the columns of steam arising from them, also bubble up from the sea not far from the shore. On the beach forming the extreme concave curve of the gulf, at the base of the escarpments of the "Two-horned" Mountain, flow other hot springs (104° F.), those of *Hammam Lif* or *Hammam-el-Enf*, which are used in an ancient palace of the Bey, soon to be replaced by a modern establishment, replete with every luxury and comfort. Autumn is more especially the season in which strangers, chiefly Jews, visit these waters. Hamman Lif is already included in the extensive municipal jurisdiction of Tunis. Both places will ere long be connected by a railway, which is to be continued to Hammamet, and a small port is soon to be constructed at Hammam Lif. The Mountain of the Two Horns contains beds of argentiferous lead, which are not being worked; but the Jebel Ressas, or "Mountain of Lead," which rises a little farther south, is being honeycombed by hundreds of miners, nearly all of whom are Italians.

The basin of the Wed Melian discharges into the Gulf of Tunis near *Rades*, an ancient village which faces Carthage from the top of the hill on which it stands. *Zaghwan*, the only town in this basin, may, like Hammam Lif, also be considered as a dependency of the neighbouring capital. Situated directly south of Tunis, between the heights of 530 and 780 feet, Zaghwan is the health-resort of the Tunisians, thanks to its pure air, its running waters, gardens, and groves of trees, amongst which are many European species. From this place the capital obtains its supply of water. In the near future it will become the outpost of Tunis, from a strategical and commercial point of view, by means of a railway which will command the towns of the east and south, such as Sûsa, Kairwan, and Gafsa. The newly opened routes have already transformed Zaghwan into a provisioning station and a centre of traffic. A well-preserved triumphal arch and some inscriptions prove that this town had been occupied by the Romans.

At the time of the immigration of the Andalusian Moors, a colony of these fugitives was established at Zaghwan, which is still peopled by the descendants of these industrious artisans; they are more especially engaged in cultivating the gardens, dyeing caps, or *sheshias*, and dressing skins. The water of Zaghwan is said to have peculiar properties for contracting tissues and preparing them to take the colours; hence the caps of Tunis are preferred throughout the Levant to those of France and other countries. From the summits of the rugged mountain which commands Zaghwan, a splendid view can be had over the whole of north-eastern Tunis, from the coast of Sûsa to the headlands of Carthage. On one of the

advanced spurs of this eminence, MM. Rebatel and Tirant have discovered a prehistoric necropolis, comprising nearly three hundred dolmens, all disposed in the direction from east to west. In a defile near Mount Zaghwan is the pass of the "Saw," in which the mercenaries were massacred at the close of that atrocious war which threatened the existence of Carthage.

Fig. 53.—Aqueducts of Carthage.

Scale 1 : 733,000.

Imposing or pleasant views follow in succession along the skirts of this mountainous mass; but the most charming prospect is presented by the district which surrounds the nymphæum of the great fountain whence the aqueduct of Carthage drew its chief supply. This temple, standing on a terrace over a mile south of Zaghwan, and half-way up the mountain's side, is built on the solid rock, and is finished with peristyles, steps, and basins, whose dazzling whiteness contrasts vividly with the green trees and the various colours of the boulders scattered over the slope of the mountain.

The aqueduct of Zaghwan is connected with that of Jebel Jughar, which carries a less copious stream, and the two currents unite in the now restored Roman aqueduct, which stretches northwards in the direction of Tunis and Goletta for a total distance, including its branches, of 80 miles. The subterranean parts of the aqueduct have been to a large extent utilised for the new canal, but wherever the depressions of the ground were crossed by long rows of arcades, the arches have been replaced by underground pipes disposed on the principle of the siphon. South of the passage of the Wed Melian, a section of the ancient aqueduct can be followed uninterruptedly for more than a mile, some

of its arcades rising to over 80 feet in height; but almost everywhere the ruins of the aqueduct present little more than short detached fragments, utilised as quarries by the local builders, and stripped of their angular stone facing. The very engineers who repaired the aqueduct have destroyed the finest fragment that still remained of the monument raised by Adrian and Septimius Severus: they have pulled down the bridge over the Wed Melian to form the foundations of their modern aqueduct, which it would have been easy to have carried in another direction without increase of expenditure.

The remains of the aqueduct, as well as those of the ancient Roman city of *Udna* (*Udina*), have been used to build the walls of farms, the huts, and now abandoned palaces of *Mohammedia*. Huge megaliths are scattered around the ruins of Udina, and the cisterns have been converted into dwellings and refuges for cattle. The mean discharge of the springs still utilised was in 1885, 175,000 cubic feet daily, and this quantity will soon be increased one-half by enlarging the area of supply. When these works are completed it is expected that the greatest daily discharge will be 425,000 cubic feet, the mean ranging from 250,000 to 275,000 cubic feet.

## Tunis.

*Tunis*, capital of the Regency and one of the largest cities of the continent, was second to Cairo alone in population at the beginning of this century. Now, however, it is surpassed by Alexandria, and probably by Algiers, if the total population within and without the ramparts be taken into consideration. Although more advantageously situated in many respects than the capital of Algeria, it has been, if not outstripped, at least equalled, in consequence of the political, military, administrative, and economical centralisation which more than half a century of French occupation has effected in the town of Algiers. Viewed from a general geographical standpoint, Tunis still possesses a few of those great advantages which Carthage enjoyed; it is situated near the projecting angle of the Maghreb, between the two basins of the Mediterranean, and lies also near the mouth of the great valley of the river Mejerda, which with its numerous ramifications penetrates into the heart of the Mauritanian mountains and plateaux. Moreover, it has a very healthy climate, thanks to the free circulation of the north winds. Some three thousand years ago, or even at the possibly still more remote period of its foundation, certain local features in the relief of the land, offering commercial advantages and facilitating its defence against attack, must necessarily have had a decided influence in the choice of this site for a new Phœnician settlement. At this point a chain of low limestone hills cuts off the great plain facing westwards in the direction of the Mejerda; and this strategical position is all the stronger, that both sides of the rocky ridge are enclosed by vast lacustrine depressions. These are the Sebkha-el-Seljum to the south-west, which increases and decreases with the rainy and dry seasons, and the Bahira, or "Little Sea," to the north-east, whose level never changes, thanks to the "channel" connecting this lagoon with the Mediter-

ranean. Thus the town of the Tunisian isthmus was almost impregnable on two of its sides, while it also commanded the valley which connected the valleys of the Mejerda and the Wed Melian. Moreover "the Little Sea," although not very deep, was sufficiently so to receive vessels of light draught. Sheltered from rough weather, they could safely discharge their cargoes on the beach of Tunis. At the same time, certain conditions which were at one time favourable have, during the course of centuries, become the reverse. The low-lying lagoon of the Bahira, into which our modern vessels of heavy tonnage cannot penetrate, has changed into a vast open drain flooded with foul stagnant water. Thus Tunis now enjoys but a small share of the advantages usually associated with a maritime situation; it has become an inland town, endeavouring, by an artificial port, to regain the privileges with which nature had formerly endowed it.

Probably of an origin anterior to Carthage, Tunis, or Tunés, had its periods of great prosperity. When mention is made of it for the first time, it had already been eclipsed by its powerful neighbour, Carthage; but, after the destruction of its rival, Tunis became for a short time the most populous city of that region. Carthage, however, was soon rebuilt by the Romans, and again took its place as mistress of the country.

At the end of the seventh century of the vulgar era, Carthage, again overthrown, ceased to exist, and since that period Tunis, one of the centres of the Mussulman power, has remained the capital, in spite of constant civil dissensions and foreign wars. Throughout a period of twelve centuries it once alone fell into the hands of the Christians. In 1270 Louis IX. succeeded only in gaining possession of the "castle" of Carthage, dying on his bed of ashes before Abu Mohammed, King of Tunis, was forced to sue for peace. But in 1535 Charles V., assisted by twenty thousand slaves, who had revolted against Kheïr-ed-Din, entered Tunis, which he gave to a vassal prince, at the same time erecting the fort of Goletta, so as to command the communications between the capital and the sea. But before the year had drawn to a close it was retaken by Kheïr-ed-Din, and from that time it remained under the government of beys, vassals of the Turk, till 1881, when the official suzerainty ceased to belong to the Sublime Porte, and passed into the hands of the French. Before the Turkish rule, Tunis, "the white, the odorous, the flowery, the bride of the west," was looked upon by the Mussulman world as a city without equal. It was the "rendezvous of travellers from the east and the west, and it contained all the advantages that man could desire. Whatsoever the whim of man might fancy could be obtained in Tunis. Its power and glory placed it as a sovereign above its rivals, the capitals of the east and west." Tunis might well have said, "I am the ladder of the temple, by which the faithful mount up to heaven." At the present day Tunis is still considered by all the North African Mussulmans, except those of Egypt and Morocco, the city of good taste, literature, and fashion—in short, a kind of African Paris.

Covering a superficial area of over one square mile, and yearly increasing in size, Tunis slopes eastwards on the gentle incline of the hills commanding the western bank of the Bahira. It extends about a mile and a half from north to

south, with a mean breadth from east to west of over half a mile. The central quarter, which the people still designate as *Medina*, the "Town," in a pre-eminent sense, is of an irregular oval shape, its long axis running due north and south throughout nearly the whole of its circumference; it is still surrounded by an ancient wall connected with the fortifications of the kasbah. The northern suburb of Bab-es-Suika and the southern quarter of Bab-el-Jezira (Bab-ez-Zirah) are also surrounded by an enclosure consisting of a broken line of ramparts, which, from the quadrilateral kasbah standing on the hill, stretches from bastion to bastion; but to the east—that is, on the side of the Bahira—these walls have disappeared, yielding as it were to the pressure of the population, which overflows its limits, and quite a new quarter has sprung up along both sides of the central avenue. The Marina, as this quarter is called, runs in the direction of the platform, skirted by jetties, where begins the navigable channel of the lagoon. Since the first years of this century, the border zone of the Bahira has increased by at least 2,330 feet; it daily grows larger, thanks to the alluvia brought down by the drains, and excavations made in the lands covered with buildings. The low level of the soil renders this "New Tunis" the most unhealthy quarter of the town; but this place, where stand the two railway stations and the port, and where one day will rise the town hall, the law courts, theatre, and exchange, has the advantage of presenting to the builders an unlimited space, and already long rectilinear perspectives have been developed at right angles between the white houses of the European quarter. This perspective will no doubt be one day prolonged across the network of the thirteen hundred streets of the old town.

In the vicinity of the kasbah the work of demolition has already begun, leaving open avenues between the public monuments. The circular boulevard, which is now being made round the "Medina," properly so called, is the forerunner of a system of thoroughfares planned in the European style. As in so many other towns, this change, it is to be feared, will be accomplished in a somewhat reckless fashion. Few of the picturesque Moorish houses will gain the benefits of fresh air, light, and comfort, without sacrificing their characteristic features, such as arcades and arabesques, and thus becoming mere formless blocks of stone. However, the exquisite art of the house decorator has not yet been quite lost, and it would be deplorable to allow it to perish.

The streets of Old Tunis are naturally much more picturesque and less formal than the regular thoroughfares of the European quarter. None of them are laid down on straight lines, but everywhere present gables, angles, projections and curves, radiating in all directions. The streets are crossed overhead by roofed arches of various heights, some mere arcades uniting two houses facing each other, others bearing two or three stages on their interlaced groinings. Some of these arches are long enough to form veritable galleries, like those of the Berber towns in the oases. Columns of marble, brought from Carthage, support these arcades, or else enframe the doors of the houses with their endlessly varied capitals. Wild flowers grow in the crevices of the arches, while trees have sprung up at the corners of the streets, overshadowing some shop, or the seats of a restaurant.

Towards the upper end of the town, below the kasbah and the Dar-el-Bey, or "Bey's Palace," are the labyrinthine ramifications of the "Suks," each street of which, vaulted or surmounted by woodwork, is inhabited by people of the same trade, such as saddlers, linen-drapers, coppersmiths, jewellers, and perfumers. In many an alley the workshop adjoins the booth where the wares are exposed for sale; the linen is woven, the wool carded, the sheshias dyed, the copper hammered, in full view of the purchasers and passers-by. Here and there is seen a flight of stairs, and through a half-open door a glimpse can be had of an almost deserted court, encircled by arcades—a religious school it may be, or a mosque, or some other tranquil retreat in the midst of the surrounding turmoil. Few animals except some asses are to be seen in the quarter of the bazaars; but in the suburbs the streets leading to the gates of the town are blocked with horses, mules, and camels, through which the carriages, jolting over the stones and ruts, make their way with difficulty.

The types of different nationalities predominate according to their respective quarters. In the upper town live the Tunisians, properly so called, with whom are intermingled, in the suburb of Bab-es-Suika, the descendants of the Andalusian Moors. Proud of their ancient reputation as the leaders of fashion in Mauritania, the elegant Tunisians excel in the choice of the stuffs of which are made their garments, in which bright hues always predominate. The haik, light blue, delicate pink, peach, or cream-coloured, flows in graceful folds over the shoulders. But the women, amongst whom stoutness is greatly admired, contrast unfavourably with the men as regards the style of their costumes. In spite of the beauty of the striped silks, it is difficult to suppress a feeling of disgust at the sight of those ungainly figures swaying heavily in their broad and short blouses, showing the narrow drawers and the loose stockings. The black veil, with nothing but a slit for the eyes, gives them at a distance the appearance of negresses, who, however, have at least the redeeming features of a glossy skin and white teeth.

Side by side of the richly dressed Moors are the more numerous poor Mussulmans, clothed with their simple burnous of grey wool or with coarse brown caped cloaks embroidered in white. It is only by long observation that amongst all these types the stranger is able to identify the Jarâbas, or merchants from the island of Jerba, the Sufâfas or immigrants from Suf, the Mzabites, the northern Algerians, and the natives of Morocco, who have become very numerous since the arrival of the French.

The Jews, who are grouped together more especially in the eastern part of the Bab-es-Suika quarter, are divided into two classes, according to their origin. The Italian Jews, or "Grana," that is to say, the people of Gurna, or Leghorn, wear the European costume, whilst the others are dressed very similarly to the Moors; their women, however, who are as stout as the Moorish ladies, go unveiled, and wear a gold-embroidered peaked bonnet. The Maltese, who have given their name to one of the busiest streets of the city, form, both by their language and customs, the link between the Arabs and Sicilians, who represent a large portion of the local Italian proletariat. The Tuscans are now represented only by the Jews,

although Leghorn formerly disputed with Marseilles for the commercial supremacy in Tunis, at a time when the whole of the Mediterranean was even known to the Tunisians as the "Sea of Gurna." The French, whose numbers have more than tripled since the events of 1881, almost exclusively occupy the new town, near the "Marina," a promenade where meet people of all nations and costumes; Mussulmans with hats, and Christians with turbans, hybrid beings produced by the contact of two civilisations.

The transformation of Tunis into a European city is much less advanced in sanitary respects. Most of the streets having no drains, the refuse from the houses is collected in open ditches, and removed by scavengers at stated times. It often happens that for several days the streets are obstructed by heaps of earth and sand, on which all manner of filth is thrown, so as to harden it by exposure to the air, and thus render it easier to be carried away. The drains of the town, sloping towards the Bahira, run into seven open *kandaks*, or canals, which discharge into the neighbouring lake. These trenches, never being cleaned, emit an unbearable stench, to which the natives formerly attributed the exceeding healthiness of Tunis, which, however, is probably due to the north winds. But the districts watered by these fœtid streams are precisely those on which the new quarters are to be built. Hence the urgent necessity of a main drainage system for the collection of the sewage, and its chemical treatment at some distance from the town. Although there is not yet a sufficient supply of water for all requirements, there is still enough to put an end to the abominable smells which, no less than the perfumes of its flowers, have procured for Tunis the surname of "the odorous."

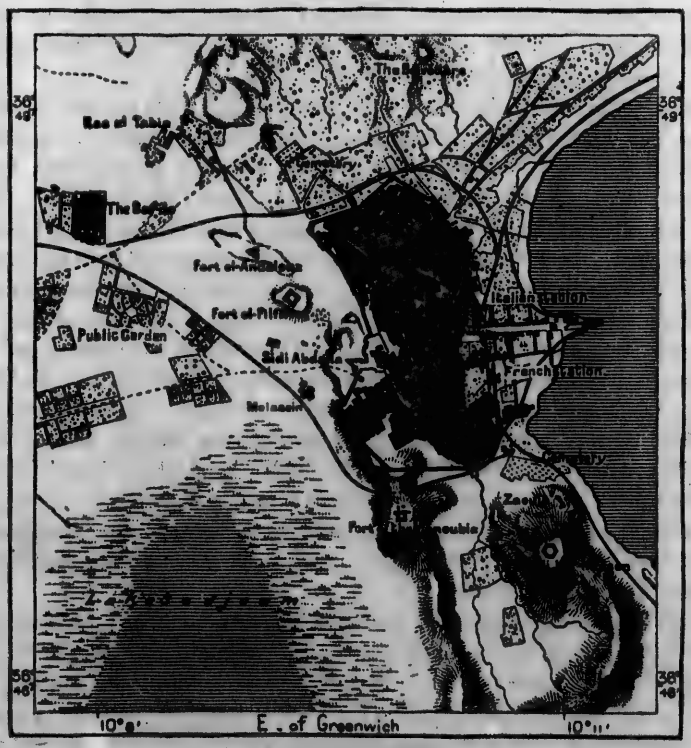
The question of rendering Tunis, and more especially the French quarter, healthy, is connected with that of the new port, which it is proposed to construct in the neighbourhood of the present "Marina." On the solution of this problem depend the future prospects of Tunis. Large ships are at present obliged to anchor off Goletta, about half a mile from the shore, and passengers and merchandise have to be landed in steamboats or rafts, which penetrate up the narrow canal, either discharging their cargo on the quays of Goletta, or proceeding to Tunis across the shallow lagoon. In rough weather, the passage from the vessel to the shore is not without danger, and the cargoes are very often damaged by the sea water. Masts rising above the water mark the sites of sunken vessels, whose keels obstruct the approaches to the coast. The heavy charges for passengers and goods between the port and the offing are also a great obstacle to the development of trade. Since Tunis has been connected with Bona by a direct line of railway, and a double stream of traffic established with the interior through the custom-house station of Ghardimau, the commercial movement has been largely diverted to Algeria, thanks especially to the superior advantages of the port of Bona. Even from Tunis itself goods have been forwarded direct to Europe through this port. Hence the urgent importance of re-establishing the natural balance by creating a well-sheltered and commodious harbour at this place. For this purpose it is proposed to form a deep entry in the roadstead by means of jetties, and to continue this channel by a cutting south of the town, and of the narrow passage now followed by the boats, which is

TUNIS—STREET IN THE SÛK DISTRICT.

itself probably the work of man. In the middle of the Bahira a navigable way is to be formed by dredging to a depth of about 20 feet, which would suffice for the vessels now frequenting the port of Goletta. The future basin would have an area of about 25 acres. Fishing is very productive in the Bahira of Tunis, the thirty boats employed in this industry yielding a yearly supply valued at fifteen hundred tons. Some speculators have proposed to drain the Bahira; but in any case it will be necessary to empty the Sebkha of Seljum, which during the floods covers a space

Fig. 54.—Tunis.

Scale 1 : 60,000.




of 6,250 acres south-east of the capital. Standing about 20 feet above sea-level, this malarious slough might easily be drained by a simple cutting south to the neighbouring gulf.

Tunis does not rank as a "learned town," and much will have to be done before it can again merit the praises bestowed upon it in the Middle Ages, when the title of El-Tunsi, or "the Tunisian," was synonymous with a man of science and letters.

No doubt, of the five hundred schools in the regency one hundred and thirteen are "Koranic," and the large schools or *medressé* attached to the mosques are always frequented by students from far and near, who recite the Koran, learn the "sciences of traditions," and, like the students of the University of Cairo, repeat grammatical rules, medical formulas, astrological spells, and magical incantations. The Jemâa Zituna, or "Mosque of Olives," the finest religious edifice in Tunis, is frequented by six hundred students, Tunisians and foreigners. Those who come from the interior of the regency nearly all become students so as to evade military service and escape the poll-tax. The Tunisian scholars study more especially law and grammar, so as to obtain a diploma which will enable them to become either professors or notaries. The mosque possesses two libraries of ancient Arabic commentaries, much venerated works, which can only be borrowed by those authorised by the Sheikh-el-Islam, the head of the University.

But the movement that is to give renewed life to science must come from abroad, and this extraneous influence is, fortunately, not wanting. Besides the primary Italian and French schools and establishments founded with religious motives, such as the Jewish schools and the Catholic College of Saint Charles, there are also institutions where the Mussulmans can study the French language and the rudiments of science. The Sadiki College, founded in the reign of Sadok, has a hundred and fifty pupils, many of whom have already been sufficiently advanced to enter the Alawi College, a normal school of recent foundation, where the pupils are trained as masters for the future schools of the regency, and where the young Mussulmans and Europeans are seated on the same forms. In 1885 the number of Mussulman children who were receiving a French education was calculated at six hundred; while the Franco-Jewish schools, founded by the Israelitish Alliance, were instructing over twelve hundred children in the same language. But, although possessing valuable private collections of books, Tunis has as yet no public library or museum, and the works which have been presented or left to the town still (1885) repose in the packing-cases. The historian Ibn-Khaldun was a native of Tunis.

Outside the fortifications there are no straggling suburbs, and the desert begins at the very city gates; the bluffs of the chain separating the Bahira from Lake Seljum alone bear a few dilapidated forts and two Mussulman convents. The palace of the Bardo, which stands in the plain, north of the Seljum depression, is not an isolated structure, but quite a separate quarter, with ramparts and towers, set apart not only for the prince but also for the whole court, garrison troops, and a large population of provision-dealers and artisans. The royal apartments, covered with ornaments, hangings, embroideries, painted flowers, alabasters, marbles, offend the eye with their tasteless mixture of forms and colours, and all this sham luxury appears all the more repulsive in association with the torn tapestries, the crumbling walls, warped timber and furniture, revealing the poverty of the place. Some country houses, which stand farther west in the Manuba olive groves, or else north of Tunis in the Ariana and Belvedere districts, and on the sea-shore in the Marsa valley, without being so showy as the Bardo are in reality much finer

buildings, more gracefully decorated, and surrounded with more luxuriant vegetation. The Bey's usual residence is at Marsa, and near his palace are grouped the

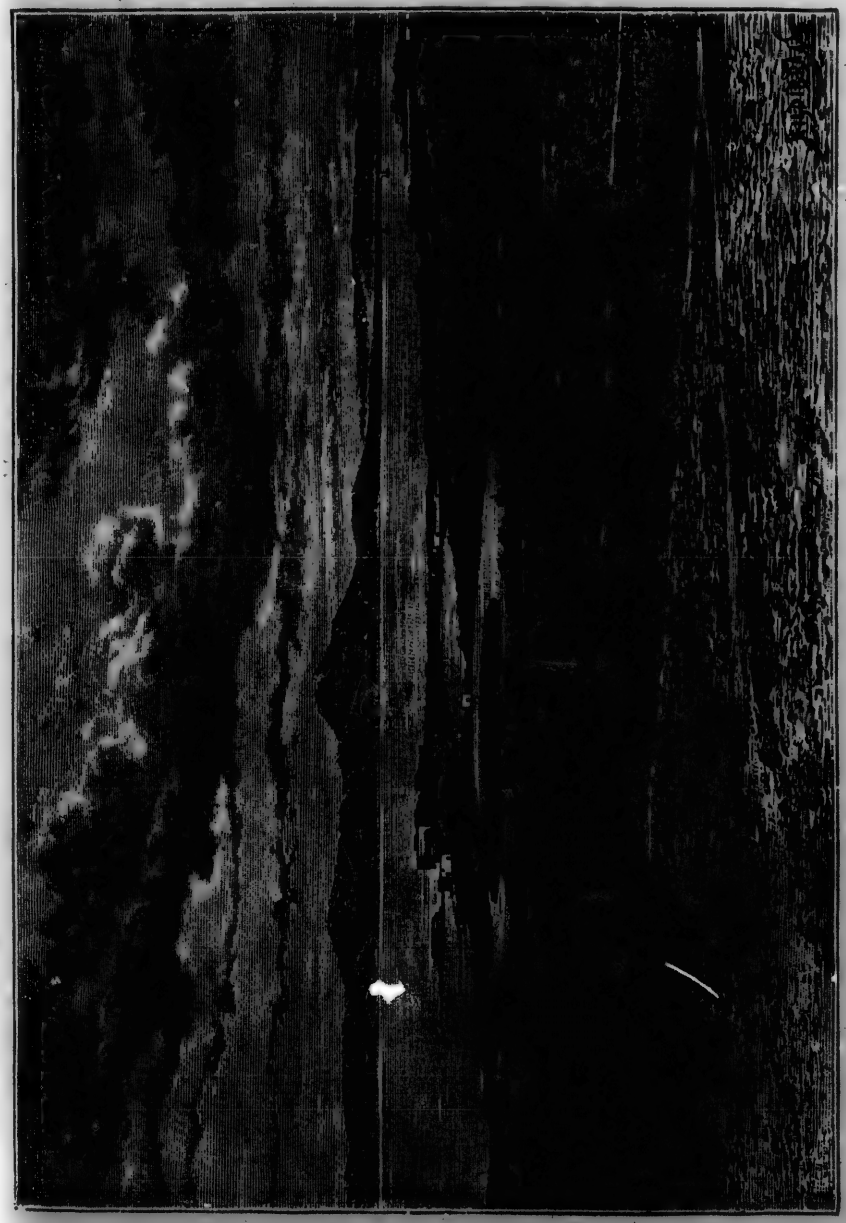
Fig. 55.—La Goletta.
Scale 1 : 74,000.

houses of the French minister, the English consul, and other dignitaries. In summer the beach at Marsa is crowded with bathers from Tunis.

This rural retreat is directly connected by a short railway with Tunis and with *Goletta*, a small town of Italian appearance, occupying the western bank of the canal by which vessels enter the Lake of Tunis. On the eastern bank the only buildings are the barracks, a mosque, a manufactory, and the gate leading to Rades. The new houses, which already form a distinct quarter, are built farther west, at the narrowest point of the sandy spit of land known to the ancients as the *ligula*. Still farther on the military hospital of *Kram*, or the "Fig-trees," forms the nucleus of a new district at the foot of the Carthage hills. On these heights *Malka* occupies the very site of the ancient Carthaginian suburb of the same name, and its houses, like those of Sidi Daud and Duar-esh-Shott, are built with the remains of the old cisterns, ramparts, amphitheatre, and circus. Finally, on the highest point of Cape Carthage, the white houses of *Sidi Bu-Saïd* are visible amid the surrounding olive groves. This town was formerly a sacred place, which Christians were forbidden to enter, but it is now much frequented by all classes of Tunisians. It is commanded, from an elevation of about 430 feet, by a lighthouse, and during the hot season it enjoys a fresh sea breeze blowing above the stagnant atmosphere of the plains.

### Carthage.

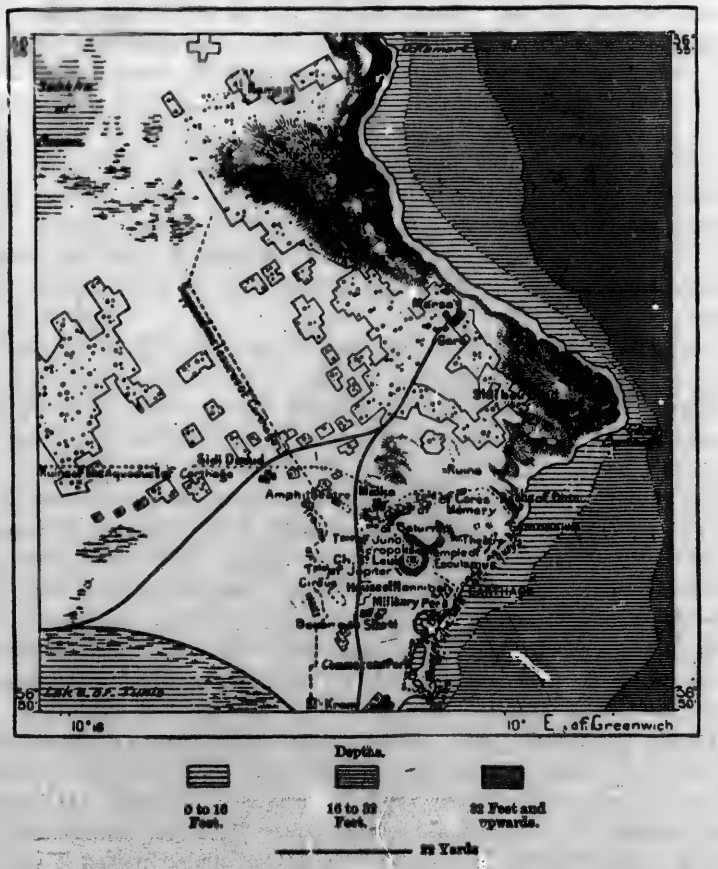
The first Phœnician colony was probably built at the extremity of the cape, between the sea and the lake, at the spot where now stand the Kram hospital and the half-choked-up basins of the port. But *Kombeh* (Kambi or Kaccabi), the town of the Sidonian immigrants and, together with Hippone, the oldest colony on the coast, does not appear to have flourished until the arrival of the Tyrian immigrants, when a new city was founded under the name of *Kiryath-Hadeshat* or *Kartadash*, whence the Roman form *Carthago*. The plateau on which the first Tyrian colonists excavated their tombs, outside the city, and where they afterwards built the citadel of *Byrsa*, has been clearly identified by archæologists. Situated to the south in the Carthaginian hills, it stands at a lower elevation than the Sidi Bu-Saïd headland, but it offers a much more advantageous and regular site for extensive buildings. The work of nature also appears to have been perfected by the hand of man, by a levelling process similar to that which the Athenians executed on the summit of the Acropolis. In the centre of this platform stood the temple of Eshmun, and, under the Roman sway, Esculapius was worshipped here, representing the same divine force under a different name. Since 1842 this tract of land, presented to France, is commanded by a chapel dedicated by Louis Philippe to St. Louis. According to the local tradition, the French king embraced Islam before his death, and the Arabs still worship him under the name of Bu-Saïd, or the "Father Lord." A beautiful garden surrounds the chapel, in whose walls are embedded thousands of old remains—Punic, Roman, and Christian inscriptions, busts, bas-reliefs, fragments of sculptures, idols, statues of saints and martyrs, altars and tombstones. The buildings of the great college which skirts one of the sides of the Byrsa terrace contain, on the ground-floor, the most valuable inscriptions of the collection, urns, sculptured stones, glass and metal objects.



OLD FOSSE OF CARTHAGE.

This museum, mainly of local origin, is rendered all the more valuable by the marvellous panorama which unfolds itself to the view of the observer from the lofty terrace of Byrsa. At his feet lie the lake, the shimmering sea, the town of Goletta, Mount Bu-Kurneïn recalling the outlines of Vesuvius, the distant

Fig. 56.—Carthage.
Scale 1 : 96,000.




Zaghwan peak, and, in the immediate vicinity of the plateau, the sparkling and winding waters of the former Carthaginian ports.

On the steepest side of the rock of Byrsa, now covered with vegetable mould, Beulé has brought to light the remains of walls in some places still 16 feet in height, and similar in construction to the so-called Cyclopean walls. A bed of cinders, filled with metal fragments, pieces of glass, and potsherds, is probably a remnant of the fire which preceded the capture of Byrsa by Scipio. The wall

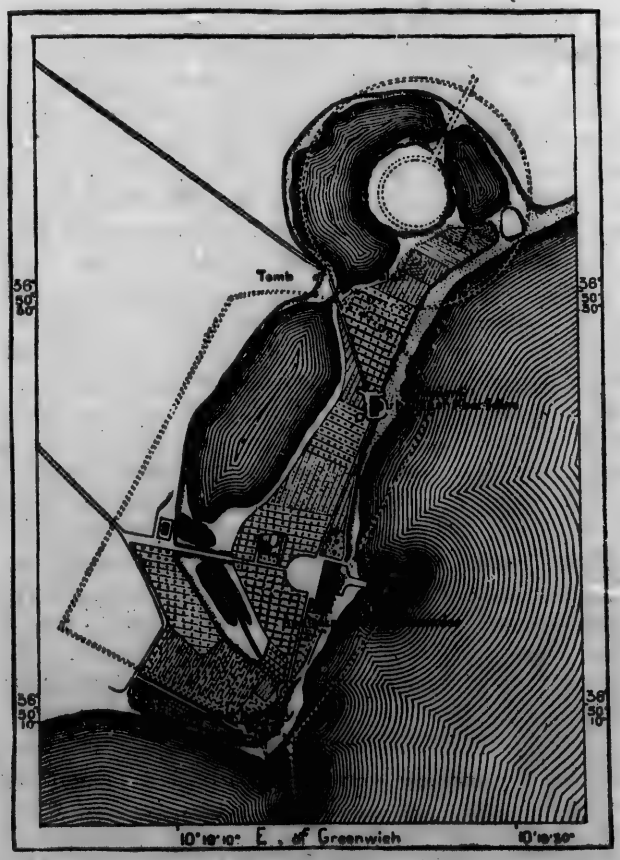
which has been laid bare is no less than 33 feet thick, affording room for five or six chariots to pass abreast on its flat top. Recesses were hollowed out in the thickness of the wall, which doubtless served as magazines and retreats for the garrison. The whole of this structure is as hard as the most compact rocks; the Roman walls erected on Punic foundations are much less solid, and are easily blown up by gunpowder. The other relics of those days, even those hidden under heaps of more recent ruins, have also been destroyed or converted into shapeless masses. In fact, "Tunis and its environs have no other quarry than Carthage. The Arabs are as industrious as moles in undermining the ground; they proceed beneath it by subterranean passages, and follow along the walls which they demolish and carry away without thinking of what they are destroying." There still existed quite recently a corporation of "stone-seekers." In the Middle Ages the Italian republics caused the ruins of Carthage to be systematically excavated to provide building materials for their own edifices. According to a tradition the city of Pisa was built entirely of marbles brought from this Punic city. The materials now used in building the surrounding towns and villages are procured from the vast brickfields of Carthage, which lie at the foot of the Bu-Said hill.

East of the Byrsa terrace, on the gentle incline of the hill, are the best preserved of all those cisterns which served as reservoirs for the water brought down by Adrian's aqueduct. Unfortunately deprived at their eastern extremity of the earth embankment which protected them from the inclemency of the weather, they are on this side partly choked up by the remains of vaults, but to the east they are still quite perfect. The rain water which percolates through the soil is here preserved perfectly pure, and from this source the Arabs still draw their supplies. The project of repairing the cisterns of Carthage has often been mooted, with a view to provide Goletta and Marsa with water, and this work, of such urgent necessity, will doubtless be undertaken in the near future. The whole of the Byrsa reservoirs would hold 750,000 cubic feet of water, more than the combined capacity of all the others situated along the Zaghwan aqueduct. The cisterns of Malka have been changed into dwellings and caves by the Arab troglodytes.

The old Carthaginian ports, constructed on the site of the first Punic colony, are also easily recognised, although the entrance is obliterated and the military port no longer communicates with the commercial basins. Archæologists have discovered in the alluvial soil walls and quays, by which their original form may be conjectured, and the island on which the admiral resided is still to be seen in the centre of the northern basin. But it would be quite useless to attempt to restore the port of Carthage, because modern shipping needs basins with wider entrances and far greater depth than the old galleys. Hence, were Carthage ever rebuilt, as has often been proposed, a new port would have to be constructed, not inland, but in the open sea. A jetty, based on the last spur of the rocky hills at Goletta, would stretch directly southwards to depths of over 30 feet, in such a way as to enclose a vast sheet of water, which, even without artificial shelter, would be always calm, thanks to the protection afforded by the Bu-Said headland from

the west and north winds. At the time of the French occupation, it might have been possible to have transferred the capital to Carthage by a bold stroke; the plan of the Roman town still shows the streets cutting each other at right angles, so that the modern houses might be raised on old foundations. In healthiness, picturesque beauty, and commercial advantages, no less than in the glory of its

Fig. 57.—Ancient Ports of Carthage.
Scale 1 : 9,000.




name, the new Carthage might have been far superior to Tunis; but no one has ventured to interfere with vested interests, or modify the trade routes. Moreover, the greater part of Carthage having, like the hill of Byrsa, become the property of the Church, its acquisition for secular purposes would have been attended with great difficulty. The total circumference of the enclosure is said to exceed 16 miles,

including, to the north, the hill of Kamart, or Jebel Khawi, at once the quarry and the necropolis of Carthage. The soft limestone of which it is composed is pierced with hundreds of thousands of Punic, Roman, and Christian tombs. At the foot of the hill stretch the Sukhara lagoons, the ancient anchorage of the Punic fleet. Although very badly worked, the saline lakes of Sukhara nevertheless yield more salt than any other in the regency.

Although the present capital, Tunis, like the ancient Carthage, lies at the natural issue of the plains and upland valleys of the Mejerda, the basin, properly so called, of this river has no towns whose population can be compared to that of the coastland cities, such as *Sfakes* and *Sûss*. On the banks of the tributaries of the Wed Meleg, which is the longest river of the basin, nothing occurs except Arab encampments nestling amidst the ruins of vast cities. This region, which at first sight seems to be completely deserted, because the dwellings of the people are almost merged with the ground on which they stand, was in the time of the Romans one of the most populous countries of civilised Africa. As on the upper affluents of the Wed Gafsa and of the rivers flowing east to Lake Kelbia, the traveller here also meets with imposing ruins covering vast extents of land. One of these ancient towns, situated near the Algerian frontier, some 24 miles north-east of Tebessa, appears to be the *Ammædara* of Ptolemy. These ruins, known to the Arabs by the name of *Haidra*, are about 3 miles in circumference, and include a citadel, a triumphal arch of the time of Septimius Severus, a theatre, and several Christian basilicas. About 12 miles to the north-east, on the bank of an affluent of the Meleg, stands the still inhabited town of *Thala*, surrounded by the extensive remains of the opulent city of the same name, where Jugurtha vainly sought a refuge for his family and treasures. After forty days of repeated assaults the town succumbed, but its defenders withdrew to the royal palace, to which they set fire, and perished with all their effects, thus defying the anger of the Romans and baffling their cupidity. Not far from Thala are the remains of another town, whose thermal waters are still visited by the surrounding tribe of Majer Arabs, who apply the name of *El-Hammam*, or "the Warm Bath," to these remains.

*El-Kef*, the chief town in the Meleg basin and in Western Tunisia, is likewise a place of great antiquity. It was already famous at the Phœnician epoch, and had a sanctuary dedicated to Astarte, whither people came from all parts to worship this goddess. This worship was continued under the Roman government, pilgrims for centuries still visiting the temple of Venus, whence the name of *Sicca Veneria*, long preserved under the corrupted forms of *Shikka Benaria* or *Shakbanaria*. This was turned by the Arabs into Shok-ben-Nahr, or "Fiery Thorn," which gave rise to the unfounded belief in the existence of volcanoes in this district. At the present time the town is known merely as *El-Kef*, or "the Rock." Built in the shape of an amphitheatre on the slope of Jebel Dir, at a mean height of 2,650 feet, El-Kef owes its importance to its strategical and commercial position, at the converging point of nearly all the main routes of Western Tunisia south of the Mejerda. It is extremely rich in springs, a feature of paramount importance in these arid regions. One of the springs issues from a cavern decorated with Roman

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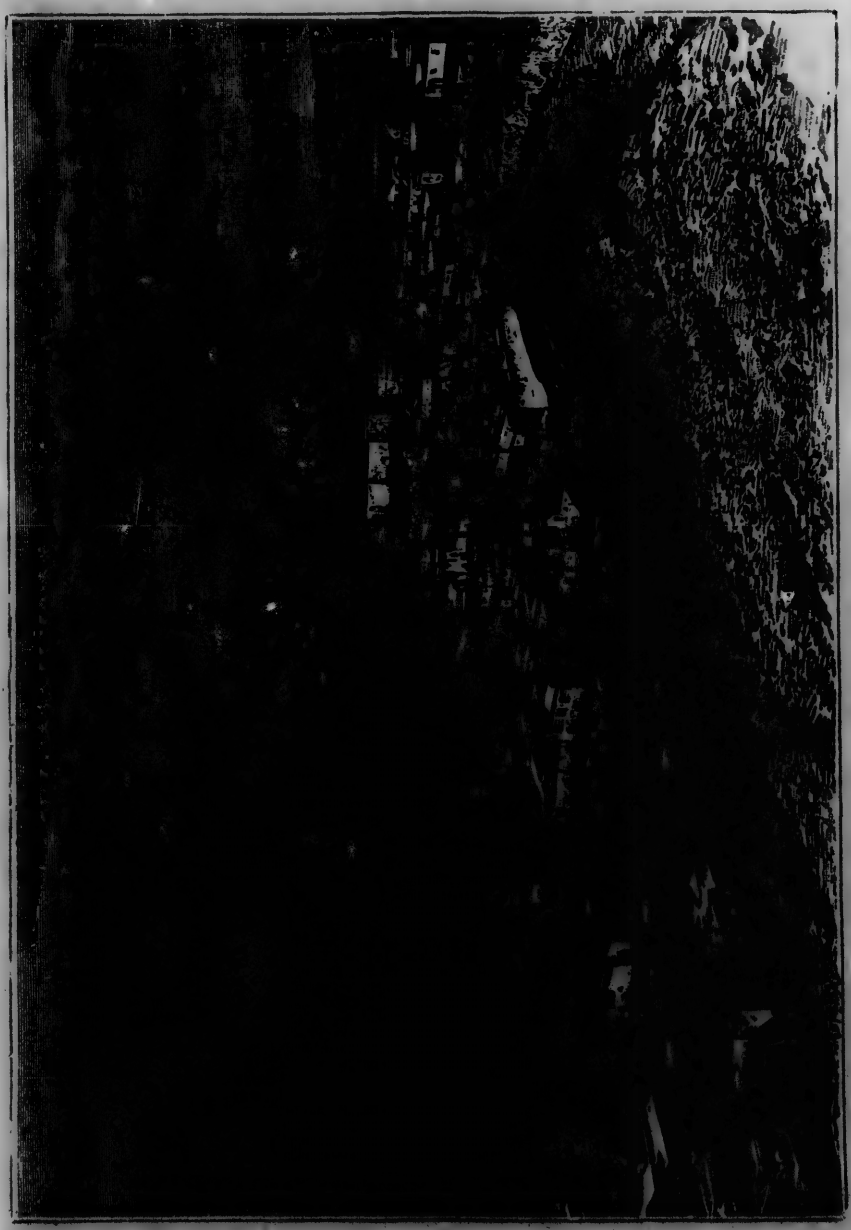


GENERAL VIEW OF EL-KEF.

arcades, which can be followed for some distance into the interior of the rock. Some splendid Roman cisterns have also been preserved. The French have chosen El-Kef as their military centre, from which to command the whole region comprised between Kairwan, Tebessa, and Suk Ahras, and the garrison they have stationed has greatly increased the local trade. El-Kef is connected with the Tunis railway by two rough carriage roads which pass through *Neber*, a small hamlet surrounded by gardens. A geographical and archæological society has been recently founded at Kef.

In the Mejerda valley, the rising village of *Ghardimau*, the present frontier military station and custom-house, stands at the mouth of the gorges through

Fig. 58.—Plain of Ghardimau.

Scale 1 : 265,000.

which the river emerges from the Algerian plateau on the rich central Tunisian plains. In spite of the natural importance of this position, which is defended by a fortress, Ghardimau is still a mere collection of wretched hovels. Far different was the Roman colony of *Simittu*, whose ruins lie north-east of Ghardimau, between two rocky bluffs commanding the plain. Simittu, the *Shemtu* of the present day, was one of the principal stations on the route from Carthage to Hippo; its site is indicated by the ruins of its amphitheatre and of the bridge which here spanned the Mejerda, continuing the route from Sicca Veneria to the port of Tabarca. The cliffs which tower above Shemtu are composed of beautiful pink, yellow, green, and purple-veined marbles, which the Roman emperors

largely used in decorating their palaces. The quarrying works have been resumed for some years past, and quite a colony of Italian workmen has been established amid the ruins. The mass of marble which projects above the soil is calculated to contain about 875,000,000 cubic feet. The blocks of marble are taken on a branch line to the main railway, and transported to the port of Tunis. In Roman times they were conveyed directly to Tabarca, across the mountains of Khumiria.

Below Ghardimau, and connected with it by rail, is the market-town of *Suk-el-Arbâ*, or "the Wednesday Fair," on the right bank of the Mejerda, and in the centre of the extensive corn-growing Dakhla plain. From a strategical point of view Suk-el-Arbâ is also of capital importance, being traversed by the route which engineering skill has constructed between El-Kef and Aïn Draham in Khumiria. A small fortified camp has been established at this place to command the passage of the river, which has not yet been bridged. The future value of this position is so well understood that the railway company have made it the central station of the service between Tunis and Suk-Ahras; yet Suk-el-Arbâ itself still remains a mere collection of miserable huts in the midst of large encampments, almost hidden from sight by the surrounding vegetation. On Wednesdays an immense crowd of buyers and sellers swarm on the roads which radiate around Suk-el-Arbâ, and the following day this commercial movement is directed north-eastwards to another station on the plain, called *Suk-el-Khmis* or "Thursday Market." The old Roman city of *Bulla Regia*, where the traffic of this fertile African region was centered, lay north-west of Suk-el-Arbâ, on the western spur of a little chain of hills, now known as Jebel Larbeah. All that remains of this town are the ruins of its fortresses, of a triumphal arch, a theatre, and a bridge. Its hot baths were supplied by a copious stream which has been recently diverted towards the camp of Suk-el-Arbâ.

### Beja—Utica—Bizerta.

Beja, the largest inland town in the district bounded south by the course of the Mejerda, is also of ancient origin. But of the old Roman *Vacca* or *Vaga*, whence it takes its name, scarcely any remains have survived. Beja is built in the shape of an amphitheatre on the eastern slope of a hill, above a verdant valley through which winds the wed of the same name; from all parts towards its gates converge broad roads, here and there enclosing small patches of verdure, and scored throughout with blackish ruts formed by the Roman chariot wheels. Beja is surrounded by crumbling walls and commanded by a grey and red kasbah, now occupied by a small French garrison. The lower part of the town, whose appearance is still unchanged by the introduction of European buildings, presents nothing to the view except the irregular terraced roofs of its white houses. The principal mosque, consecrated to Sidi Aïssa, *i.e.* "the Lord Jesus," is an ancient basilica, as appears from an inscription on the wall, discovered by M. Guérin. According to the natives, it is the most ancient religious monument in the whole of Tunisia. Except a few dozen Maltese, there are scarcely any foreigners to be met in the streets of Beja, and Europeans rarely visit the bazaar. Nevertheless this town will

soon be connected with the main Tunisian railway system by a branch line, which will tap a rich and extensive agricultural district. During the fairs it is visited by dealers from all parts, and its population is then nearly doubled. The surrounding district has retained the special name of *Frikia*, formerly applied to the whole Roman province; thus by a curious contrast this term of "Africa" is on the one hand restricted to a small rural district, whilst on the other it has been extended to the whole continent. The numerous mines, situated in the hills north of Beja, will soon be traversed by the railway running to Cape Serrat and Tabarka.

The basin of the Wed Khallad, which falls into the Mejerda at the mouth of the gorges, is one of those Tunisian districts which most abound in the finest Roman remains. In the upper valley of the tributary are *Zenfur*, the ancient *Assuras*, and *Mest*, formerly *Musti*, with their remains of temples, theatres, triumphal arches, and mausoleums. Farther down *Dugga*, the ancient Phœnician and Roman *Thugga*, is still more interesting from an archæological point of view, for here are still to be seen nearly the whole series of public monuments which usually ornamented the great cities under the Roman Empire. The famous bilingual (Punic and Libyan) inscription, discovered in 1631 by Thomas d'Arcos, and the study of which led to the reconstruction of the Berber alphabet, has been detached from the superb mausoleum, of which it formed one of the faces, and deposited in the British Museum. But the Arabs employed by Read to carry out this work have unfortunately demolished a large portion of the building, and the entrance of the sepulchral chambers is now obstructed by heaps of overturned blocks. About 3 miles north of Dugga lies the little modern town of *Tebursuk*, in the midst of olive-trees which yield the best oil of this region. Here also stood a Phœnician city, restored by the Romans, and many ancient ruins are still to be seen, more especially around the copious spring near which stood the town of *Thibursicum Bure*. West of Tebursuk rise the escarpments of the Jebel Gorrha, said to be one of the richest in veins of argentiferous lead; but these mines, pierced with many hundred galleries by the Romans and Carthaginians, are no longer worked, although they could be easily connected with the main Tunis railway by a branch line.

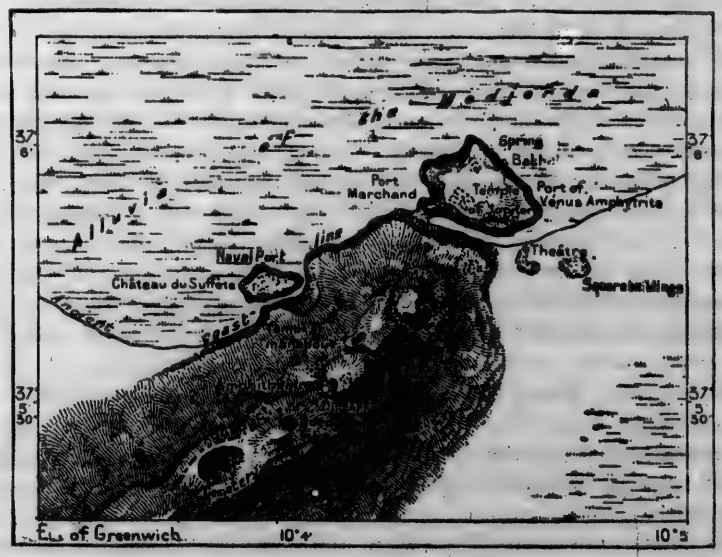
The fluvial basin of the Wed Siliana, which falls into the Mejerda north-east of Tebursuk, is scarcely less rich in old ruined cities than that of the Wed Khallad. The site formerly occupied by the "mysterious *Zama*" is sought for in this basin as well as in those of the Meleg and of the Wed Khallad. Not far from the Kessera plateau, which is covered with numerous dolmens, are the still imposing ruins of the *oppidum Mactaritanum*, the *Makter* of the present day. The camp of *Suk-el-Jemâa*, situated on a neighbouring plateau, has been selected as an intermediate station between Kef and Kairwan. This spot is the strategical centre of the whole of Tunisia south of the Mejerda.

Below the confluence of the Wed Siliana, *Testur*, a small town of great antiquity, standing on the right bank of the Mejerda, is mainly peopled by "Andalusian" Moors, whose industry has surrounded it with well-cultivated gardens and fields. Farther down on the same bank the hamlet of *Slughia* is peopled with

merchants and guides who point out the fords over the river and assist the passage of the caravans. Still lower down *Mejez-el-Bab*, also on the right bank, guards the entrance to the lower valley of the Mejerda; it takes its name of "Ford," or "Passage of the Gate," from a triumphal arch which formerly stood at the northern extremity of a Roman bridge, but of which nothing remains except a few blocks scattered over an old river bed. A modern bridge spans the new channel excavated by the Mejerda. The little villages of *Teburba* and *Jedeïda*, which next succeed along the banks of the river, already belong to the outskirts of Tunis, which their inhabitants, many of whom claim to be of Andalusian origin, supply with vegetables and fruit. They have both a bridge over the river, a railway

Fig. 59.—Ruins of Utica.

Scale 1 : 25,000.




250 Yards.

station, and a few small industrial establishments. Teburba is the modern form of the ancient Roman *Tuburbo Minus*, and here are still to be seen the remains of an amphitheatre whose arena is now overgrown with brushwood. But the town has changed its site, as the Roman colony stood farther west on the slopes of a hill.

North of Jedeïda, the Mejerda, which winds through the lowlands and marshes, has no more towns upon its banks. The city of *Utica*, the elder sister of Carthage, which commands its mouth, is now indicated merely by a kubba, the "marabut" of Bu-Shater, a name meaning the "Father of Skill" or the "Wise Man,"

possibly in reference to the famous Cato of Utica, so renowned for his high virtues and calmness in the presence of death. A thorough examination of the ground has brought to light the acropolis, aqueduct, cisterns, amphitheatre, theatre, hot baths, quays, and military port of Utica. By examining the relief of the land, the plan of the town, with its ramparts and buildings, has almost been reconstructed, and many objects of value have been found amongst the ruins, none of which are now visible above the ground. At the extremity of the rock of Utica flows a mineral spring whose waters are exceptionally rich in arsenical salts. East of the headland, on the opposite side of the plain now watered by the Mejerda, rises the cape on which stood the Castra Cornelia, or winter quarters of Scipio during his campaign against Carthage. The town of *Rhar-el-Melah*, called *Porto Farina* by the Italians, is no longer a port, the alluvia brought down by the Mejerda having almost completely closed the passage by which its lake formerly communicated with the high sea.

*Biserta*, or rather *Benzert*, the corrupted form of the ancient Phœnician *Hippo-Zaryte* (*Hippo-Diarrhytus*), lies mainly on the western bank of the shallow canal whence the town took its name of *Diarrhytus*, or the "Pierced." The houses of the European quarter stand on an islet between the two branches of the canal, and a castle to the south of the bank is called *Borj-el-Zenzela*, or "Castle of the Chain," from the chain which formerly barred the passage at this point. Bizerta presents a fairly imposing appearance, thanks to its walls flanked with towers and its quadrangular kasbah, which stands at the very mouth of the canal. Should its aspirations ever be realised, it will become a considerable city, and the chief arsenal of the French possessions in Africa. Except the strait of Messina, no other harbour could be more advantageously situated than its lake both for sheltering the navy and for guarding the most frequented passage of the Mediterranean. Vessels of more than twenty tons burden are now obliged to anchor in the offing of Bizerta. The coral fisheries, which were conceded to the French Government long before the annexation of Tunisia, formerly gave employment to some twenty Sicilian barks trading under the French flag. There are now scarcely a dozen boats engaged in this pursuit; but fishing, especially for mullet, and the preparation of botargo, gives employment to a great many sailors. The fisheries are monopolised by a Marseillaise company, who rent it annually. The Andalusian Moors, who occupy a separate quarter outside the walls, and the Maltese immigrants, impart a certain animation to the town, which, however, is not yet of sufficient importance to justify France in laying the railway which was conceded to them in the first year of the conquest. Some of the villages near Bizerta are surrounded with well-cultivated lands; amongst them is the charming *Menzel-el-Jemil*, or the "Pleasant Retreat," situated on an escarped hill north-west of the lake.

The Tunisian shores west of Bizerta are an "iron-bound coast," shunned by mariners. With the exception of Beja, there are no inland towns; the Mogod, Amdum, and Nefza populations were still nearly independent some years ago, and the Khumirs had frequently repulsed the troops which came to collect the taxes. *Tabarka*, the *Tabraca* of the Romans, a few miles from the Algerian frontier, is

visited by a few coasting vessels, and, thanks to its position midway between Bona

Fig. 60.—Bizerta, viewed from the Kasbah.

and Bizerta, bids fair to become a busy port when its jetties and quays offer the

necessary accommodation, and when the routes running inland are bordered by towns and villages. During the invasion of Khumiria the operations of the French fleet commenced in the roadstead of Tabarka, where the plan of a new town has been traced out near the shore, at the south-east base of the steep Borj Jedid hills, and south of the islet where still stands the castle occupied by the Genoese Lomellini

Fig. 61.—Tabarka.
Scale 1 : 200,000.

family from 1540 to 1742. A few ruins of Roman buildings attest the importance which this place enjoyed at the time when it was connected by broad roads with the marble quarries of Simittu, and along the coast with Hippo and Hippo-Zarytus. Two modern routes now lead into the interior: one running from Taberka to Calle,

by the *Um-Tebul* mines, the other penetrating to the camp of *Ain-Draham*, in the very heart of Khumiria. A single line of railway will soon bring down to the quays of Tabarka, tannin, cork, timber from the neighbouring forests, and the iron, lead, zinc, and silver ores from the Nefza highlands. A second line, starting from the same mining region, which is one of the richest in the world, will run to a small port, well sheltered by the rocks of Cape Serrat. Ancient shafts and piles of rubbish, called "hills of iron" and "mounds of steel," show that many of these mines were probably worked in the time of the Romans. A number of families, who escaped captivity at the time of the capture of Tabarka by the Tunisians in

Fig. 62.—Cork-Tree of Fernana

1742, have settled in various parts of the coast, where they are still known as Tabarkans; nearly five hundred fugitives also succeeded in reaching the island of San-Pietro, near the coast of Sardinia. About nine hundred persons were reduced to slavery, and even till quite recently this trade in Tabarkan men and women is said to have been carried on. At Tunis these refugees remained for nearly a century, deprived of the rights conferred upon Europeans, until, in 1816, the Sardinian consul took them under his protection.

To the south rise the metalliferous and well-wooded mountains, whose products must one day prove a source of wealth to Tabarka, although large tracts of forest have already been wasted, and have disappeared altogether to the south of

Khumiria. On the slope of *Fernana*, a place much frequented on market days, stands a splendid cork-tree, an isolated giant, whose broad spreading branches cover a circumference of 333 feet. This trysting-place of the surrounding tribes, under whose shade the delegates of the Khumirs formerly assembled to discuss questions of peace or war, is the last survivor of a vanished forest. *Ain-Draham*, capital of this district, derives its chief importance from the presence of the French garrison troops. But even were the soldiers withdrawn, it may still survive as a convenient market town for the tribes of north-western Tunisia. Near this spot stands the famous shrine of Sidi Abdallah Ben-Jemal, which continues to be visited by thousands of Khumirs on the feast-day of the patron saint.

## Social and Political Condition of Tunis.

Tunisia is at present in a state of transition between two irreconcilable political and social systems. Although officially a Mohammedan power, it is in reality a province of the French colonial empire, and those who are called the masters of the country are really subjects, upon whom the burden of subjection weighs most heavily. Decrees are still dated according to the Mussulman era, and are preceded by antiquated Oriental formulas; but a new era has dawned upon the country, and the vital force and power come now from the West. Everything changes visibly under foreign influence: the populations, the appearance of the towns and country, the roads, trade, and the industries are all being rapidly modified.

The tide of immigration is almost entirely composed of Mediterranean peoples, because those Frenchmen themselves who emigrate to this regency belong mostly to the watershed of this inland sea. Italians were by far the most numerous of all foreigners before the French occupation, and since then they have retained, and even increased, their numerical superiority, thanks to the proximity of their country, and to the advantages which long-established currents of trade give to new-comers. In 1885 these Italian immigrants were numbered at about twelve thousand. The ranks of those engaged on the public works, agriculture, and the smaller industries are of necessity recruited from amongst these Italian proletariats. The French immigrants look for better-paid occupations, which are much more difficult to obtain. The Maltese, however, who are relatively very numerous, soon break up into two distinct nationalities. Nearly all their poor are devout Catholics, zealously obeying the orders of the French primate of Tunisia, whilst the middle class Maltese, who habitually speak Italian, are naturally connected with Italy in customs and political sympathy. It cannot be disguised that very hostile feelings are harboured towards each other by the local French and Italian colonies. The latter have not yet resigned themselves to the present state of affairs; they look upon themselves as the natural inheritors of the land, because of its geographical situation, and of the interests which they have here created for themselves, and feel aggrieved that it has been wrested from them by the French. Even in Tunis itself, the struggle for supremacy between these two foreign elements has assumed the character of national animosity. Two railways, the Italian line from Goletta, and

that of the French from Bona-Guelma, both stop short in the European quarter, and remain unconnected even by a lateral branch running towards the Marina.

Nevertheless, the occupation of Tunisia, as a complement to the Algerian territory, has tended to modify the situation to the advantage of the French element. Till quite recently the predominating European language was Italian; even in the French families the children, accustomed to converse with young playmates from Sicily or Naples, ended by speaking Italian in preference to their own mother tongue. Now, by the reverse process, French is predominating in the European and Maltese circles. In the civil and religious schools, as well as in all public places, both Jews and Mussulmans learn to converse in French, which, after Arabic, has become the language of the country. Regular schools have already been founded in most of the large towns, and Tunis, Cabes, Sfakes, Monastir, Sûsa, Kairwan, Bizerta, and El-Kef, all possess normal schools for the training of native teachers. The preponderance of the commerce with Marseilles also contributes to assimilate the country more and more to France. Finally the garrisons, and numerous employés scattered through the territory and journeying from place to place, diffuse the use of the French language around Ain-Draham, El-Kef, Kairwan, Sûsa, Cabes, and other military and administrative centres. The land is sold almost exclusively to the profit of the French speculators. There can be little doubt that, from the side of the western plateaux, a considerable tide of immigration must set in, and thus introduce French elements, such as those already developed in Algerian territory.

Great changes are also taking place in the Mussulman world of Tunisia. The place of those tribes who, accustomed to independence, quit the country in order to evade the rule of the hated "Rumi," is filled by the Algerians who come in great numbers, nearly all with the hope of making their fortunes in the service of the new masters. In every town they are to be met with in the position of coachmen, porters, and servants. During the harvest the Kabyles also arrive in shiploads of hundreds at a time, and from them the Tunisians have learnt the art of mowing their meadows. The natives of Morocco, who are much more vigorous and energetic workmen than the local Arabs, are also strongly represented, and together with the Sicilians they clear the ground and plant vines on the various properties which the French have recently acquired. The Mussulman population of Tunisia, hitherto kept down by civil wars, the raids of plundering tribes, and oppressive taxation, will probably begin to increase under the new administration. But, judging from the experience of Algerian towns, where the death-rate of the Arabs normally exceeds that of the births, it is to be feared that in the long run the same result may be produced in the Tunisian towns, in consequence of the very intimate relations of the Europeans with the Moors. The social state, so intermingled with vices, which we call civilisation, would seem under such conditions to develop its worst features, by placing the elements of corruption within easy reach of the weak, without at the same time giving them the power of resistance.

The property around the towns and railway stations is continually changing hands. Since 1861 many foreigners have purchased land from the Mussulmans,

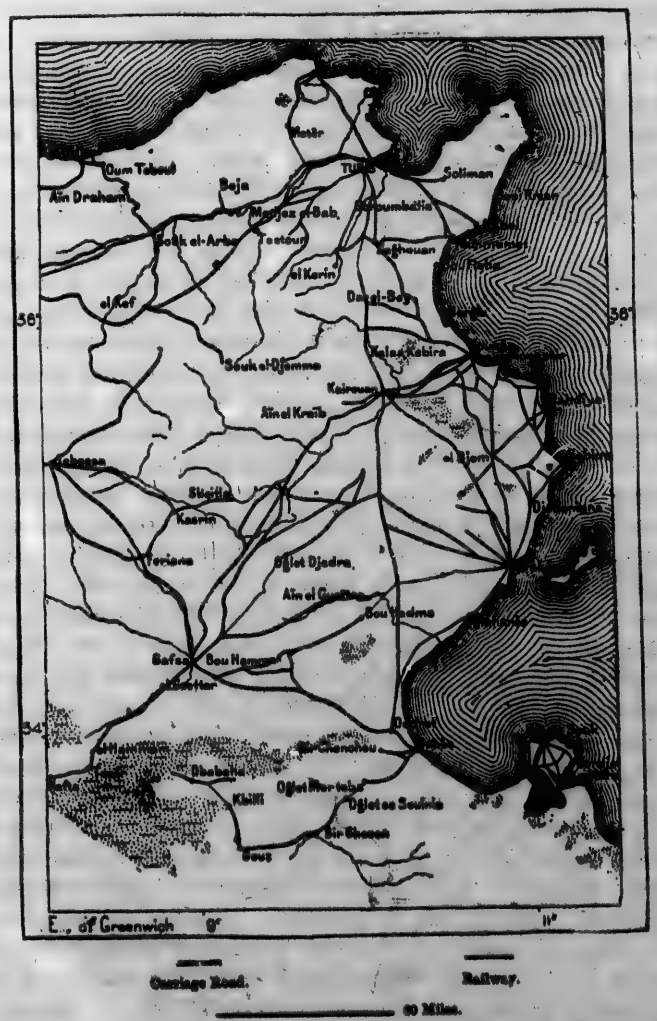
notwithstanding the uncertainty of the titles and the risks of lawsuits. A great many fresh purchases will probably be made in the near future, when by the adoption of the "Torrens" Act, introduced from the Australian colonies, the formalities for the transfer of land will be greatly simplified. The beginning of the French occupation of Tunisia presents a remarkable contrast to that of Algeria, by the rapidity with which the French obtained possession of the agricultural domains. The total area of the land which, in Tunisia, yearly passes into the hands of French proprietors, is already greater than in the whole of Algeria. The cause of this difference between these two conterminous countries is due to the fact that in Tunisia the purchasers buy the land directly from the native proprietors, whilst in Algeria it is assigned to the colonists by the Government after tedious administrative formalities. But although the French property has increased much more rapidly in Tunisia than in Algeria, it is much less democratic in its essential characteristics. In Algeria there are veritable colonists, that is to say, men who themselves handle the spade, bring up their children in the furrows, and mount guard over their crops. They form, even more than the soldiers, the real strength of French Algeria, for they have settled there of their own free-will, and made it their second home. Instead of these sturdy colonists and small landed proprietors, the European purchasers in Tunisia are chiefly representatives of financial companies, agents of absentee capitalists, or else, in the most favourable cases, enterprising men who are in charge of vast tracts of land cultivated by foreign hands. The work of colonisation, properly so-called, by the French peasantry has no chance of success except on the western plateaux, where the similarity of the physical conditions on both sides of the frontier tends to produce analogous social conditions. The important work of replanting the country has been commenced only in the Jerid dunes and along the railway from Bona to Guelma. In the Jerid the object has mainly been to solidify the shifting sand-hills, whilst the railway company is engaged in the acclimatisation of new plants. Of the four hundred thousand trees which they have had planted in their domains, the majority are Australian acacias, which yield an excellent tannin, and also a species of eucalyptus known as the "blue gum-tree." A new oasis is being developed near the Wed Melah, in the Cabes district, thanks to the artesian wells sunk by the explorer Landas. But on the other hand, the disafforesting of the country still continues, and the work of destruction by far exceeds that of restoration. Entire pine forests, near the hamâda of El-Kessera, have been destroyed solely for the sake of the bark.

The contrast between the two kinds of property in Tunisia and Algeria, is equally striking in the methods of cultivation. Whilst at the commencement of the colonisation, and up to a recent period, the Algerian farmers followed in the steps of the French peasants, endeavouring to obtain from their land the various kinds of products necessary for the support of man and beast, such as corn, roots, fruit, and fodder, the Tunisian planters devote their attention almost exclusively to viniculture. Agriculture has thus changed its character and become mainly an industrial pursuit, and the evolution which has taken place in the economic world, in consequence of the concentration of the capital, is shown in Tunisia by agricul-

tural methods different from those of the first half century of the French occupation of Algeria. Slavery was abolished since 1842, even before it was officially done away with in Algeria; but the many native day labourers, the Khammes, or

Fig. 63.—Railways and Highways of Tunis.

Scale 1 : 3,500,000.




colonists of the poorest class, who cultivate the domains of large landed proprietors, are veritable slaves—serfs bound down by the advances made to them by their masters, and which they repay at exorbitant interest from the share of the harvest

allotted to them. Hence it is not surprising that, notwithstanding the great fertility of the land, the populations of Tunisia have often been decimated by famine.

The industries, properly so called, have hardly changed since the foreign colony has attained such great importance in this country. The result of the commercial annexation has been more especially to diminish the productiveness of the Tunisian workshops to the profit of foreign industries. Although the Jacquard looms have been introduced, the Lyons textiles are gradually driving the local products from the markets of the regency. The large steamship companies, especially those assisted by the State, maintain a regular service along the coast, shipping the produce of the interior in exchange for European wares. France enjoys the largest share of the foreign trade, which is rapidly increasing.

The railways are producing in the interior of the country changes similar to those effected by the substitution of steamships for sailing vessels. They are abolishing the old method of transport by caravan and changing the direction of the trade routes. The line from Tunis to Bona and Guelma, which traverses the gorges of the Upper Mejerda, formerly avoided by the Roman highways, has diverted to Bona part of the trade of the capital. In the same way the projected line across Northern Tunisia, *viâ* Beja, terminating at the port of Tabarka, will open a new route for commercial enterprise. Another and more important line, from Suk-Ahras to Cabes, *viâ* Tebessa, will skirt the whole of the peninsular region of Tunisia, running directly from the Algerian ports to the Jerid district and the oases of Tripoli. At present the construction of railways is proceeding slowly; nor is the traffic of much importance, the company, which is guaranteed a return of 6 per cent. by the State, having no interest in developing a local trade by which it would be in no way benefitted. The railways most likely to be first constructed are the northern line, from Jedeïda to Mater, and later on to Bizerta; the eastern line, continuing that of Hammam-Lif to Hammamet across the neck of the Dakhelat-el-Mahuin peninsula; and the southern line to Zaghwan and Kairwan, with a branch to Sûsa.

In 1847, long before the annexation, the French Government had established a postal service in the regency, and later on introduced the telegraph system. The chief towns are regularly visited by postmen, and in every direction the country is traversed by telegraph wires, connecting those of Algeria with Tripoli. The Arabs scrupulously respect the wires and posts, which are useful to them as landmarks and signposts.

## Government of Tunis.

The government of Tunisia is divided between two centres of authority, those of the Bey and of the French. According to the Bardo Convention, the Bey still rules, and even exercises absolute control over all affairs of the interior; but France, who has converted Tunisia into a protectorate, undertakes the defence of the country and administers its finances through a "resident general;" in other

words, she disposes of the capital and military resources of the regency. The power is therefore really in the hands of the French, the Bey and his agents being invested with the mere semblance of authority. Nevertheless, in certain respects, Tunisia may be said to have remained a distinct state. It has a political individuality with its own administration, special legislation, and interests now opposed to those of the neighbouring territory of Algeria. In the small towns the relations between the French and the natives are regulated by consuls and "civil controllers," in the same way as those between two foreign peoples. Objections are even raised to the "Bey's subjects" being made naturalised Frenchmen. Both French and Algerian merchandise is examined by the custom-house with the same rigour as if it came from England or Italy, and is charged with an *ad valorem* duty of 8 per cent. The weights and measures are even different, and the French metrical system, already adopted by some five hundred millions of people in the two hemispheres, has not yet been officially introduced into Tunisia. The civil tribunal of the capital and the six justices recently instituted in Tunis, Goletta, Bizerta, Sûss, Sfakes, and El-Kef, decide cases between Europeans and natives according to the French laws. Since 1885 the magistrates are even paid by the Tunisian budget as officers of the Bey's Government; but they are under the jurisdiction of the Algerian court of appeal. The consular tribunals of the various nations have been suppressed, and in the rural districts the administration of justice is entrusted to the kaids, assisted by the local khalifas and sheiks. The degrading punishment of the bastinado, which was always inflicted by the despised Jews, is no longer applied. The press, which in 1885 consisted of nine papers, is subject to official control.

There are no forms of parliamentary representation, but the absolute power of the Bey is held in check by the supreme authority of the resident general, who has alone the right to correspond with the French Government through the Minister of Foreign Affairs. The officers of the army and navy and all the higher officials are under his orders. The general in command of the troops occupying the country, as well as the archbishop, who is the head of a small army of priests and nuns, and spiritual guide of the whole Maltese community, also enjoy considerable influence in virtue of their respective functions. At the same time an appearance of authority is left to the Tunisian ministry, which superintends the finances, the press, the administration of justice, the public works, the army and navy. But the French governor presides over foreign affairs as the representative of the sovereign power. According to established usage, the office of Bey is inherited by the eldest male of the family, whatsoever may be the degree of his relationship. The present heir presumptive is the Bey's brother. His official title is "the Bey of the Camp," and till quite recently he commanded the forces which are sent from province to province to collect the taxes.

The financial difficulties of the Bey were one of the chief causes which led to the occupation of the country by the French troops. The French and other bankers, who had readily advanced him large sums at heavy interest, and who held mortgages over his property, at last assumed the collection of the taxes, and sought farther security in the indirect possession of the political power. Thus arose the

intrigues and struggles of all kinds which, together with political complications, culminated in the events of 1881. Accordingly, one of the principal clauses of the treaty which put an end to the independence of Tunisia, stipulated for a financial reorganisation of the regency, "assuring the administration of the public debt and guaranteeing the rights of the creditors of Tunisia." The revenues of the country were divided into two portions: one for the ordinary expenses of administration, the other and larger portion in security for the public debt of £5,500,000. A financial committee was appointed to represent the creditors, with power to supply any deficit from the State revenues, which for this purpose were placed under their control. The Government was even forbidden to make any reforms, create or change any taxes, issue new loans, or establish any public service without their consent; and although this committee no longer exists, the interests of the creditors are none the less well protected. The chief revenues assigned to them are the custom-house duties, the tobacco, fisheries, and salt monopolies, the market dues in most of the towns, and the taxes on the olive-trees in the Sahel and other districts.

To the State is left the unpopular mejda, or poll-tax of twenty-two shillings a head, which falls chiefly on the poor, most of the rich having found means to evade it. Another burdensome tax is the *kanun*, which is charged on olive-trees, in addition to a tithe. In bad seasons the farmers have often cut down their trees to prevent the officers from claiming a tax they were unable to pay. The considerable recent increase of trade, the suppression of smuggling, the dismissal of over four thousand useless officials, and the strict enforcement of the custom-house duties, have all combined to restore order in the financial chaos; and it is even pretended that the receipts now more than cover the expenses, although the cost of the army of occupation and other claims of the French budget, represent nearly the whole value of the public income. The *habbus*, or church property, said to comprise one-third of the soil, is almost exempt from taxation, paying into the treasury little more than £4,000 a year.

In 1885 the French invading force, considerably diminished by the reinforcements sent to Tonkin, numbered eleven thousand men distributed throughout the strategical ports of the country. The three military centres are Tunis, Sûsa, and Cabes, and in the interior the chief garrison towns are, Ain-Draham, El-Kef, Kairwan, and Gafsa. The conscription is in force in Tunisia, but the native army, modelled on that of France, is employed chiefly in parade service at the palaces of Marsa, the Bardo, and Goletta. In 1884 this army, which on paper consisted of several thousand, numbered in reality only 500 infantry, 25 cavalry, and 100 artillery; officers on the retired list are even more numerous than privates in active service. But the regular army is supplemented by bodies of *makhsen*, spahis, and hambas, who act as policemen. In 1884 the Kulvgli, or Hanefiya irregulars, of Turkish origin, and the Zuawa (Zouaves), mostly Kabyles, were disbanded to the number of 4,000.

The natural divisions of Tunisia are so clearly traced, that there has been little difficulty in selecting the chief strategical points. The whole of the lower Mejerda

Valley, the basin of the Wed Melian, and the Dakhelat-el-Mahuin peninsula, are included within the military circle of Tunis. The quadrilateral group of mountains and hills bounded south by the course of the Mejerda, has the town of Beja for its capital, and the Camp of Ain-Draham has been established in the centre of this region to overawe the Khumir tribes. The mountainous districts which separate the Mejerda from the affluents of Lake Kelbia have the town of El-Kef as a military centre, while the rugged hamada region is commanded by the camp of Suk-el-Jemaa. Kairwan is the natural capital of the plains and valleys which slope towards Lake Kelbia, and the Sahel at Ras Kapudiah is divided into two sections, one depending upon Sûsa, the other on Sfakes. The natural centre of the steppes and isolated highlands of Northern Tunisia, as far as the depression of the shotts, is Gafsa, and the whole of the southern region as far as the Tripolitana frontier and the desert, forms the military district of Cabes, in some respects the most important of all, because it commands the entrance of the Saharian regions, and would enable an enemy to invade Algerian territory by the southern face of the Aures mountains.

The regency is divided administratively into *utans*, or departments of varying extent, each governed by a kaid, assisted by one or more khalifas, or "lieutenants," according to the importance of the province. The towns, villages, and tribal communities are ruled by sheikhs, who levy their fees directly on their subjects. Such fees are known euphemistically as the "price of slippers," the boots worn out in the public service being looked upon by these officials as a justification of their extortions. The municipal commissions which sit in a few communes, such as Goletta, El-Kef, Bizerta, Sûsa, and Sfakes, are composed of resident Europeans, nominated by the Government, and of Musulmans elected by the notables. The utans have been frequently changed in number. At the time of the French annexation, there were more than twenty, not including those of special tribes, nomad or half-settled, which were administered separately.

## CHAPTER IX.

### ALGERIA.

THE central portion of Mauritania, this "Island of the West," which by its geology, as well as its climate and products, formerly belonged to the European continent, has been again politically detached from Africa, and connected with the opposite shores of the Mediterranean. Even from the beginning of history, the relations of this country, whether peaceful or warlike, have always been, not so much with the African lands from which it is separated by the Sahara, as with regions lying to the north or west beyond the sea. Archæology reveals even in prehistoric times, the builders of the dolmens migrating from Gaul across Spain to Mauritania; then, at the very dawn of history, we find the Sidonians and Tyrians founding their marts on the coast of Mauritania. To the influence of the Phœnicians succeeded that of the Romans and Greeks; even during the interregnum caused by the migrations of the barbaric peoples from the north, the conquering Vandals, advancing from the shores of the Baltic, penetrated to these southern regions, where they finally became extinct without leaving any distinct traces of their presence amongst the North African nations. Then the Arabs, mixed with Syrians and Egyptians, spread rapidly throughout Mauritania, followed in their turn by the Turks, who here established a chief seat of their maritime power.

#### Historic Retrospect.

But even when the shores of Maghreb were being overrun by invaders from the east, its relations, mostly of a hostile character, were still mainly with the opposite side of the Mediterranean. For over ten centuries pirates from the south, at first known as Moors or Saracens, afterwards as Barbary corsairs, maintained a state of continual warfare against commercial Europe, and even extended their depredations beyond the Strait of Gibraltar. In order to escape these sudden attacks, the towns and villages along the Mediterranean seaboard were built on hills, at some distance from the shore, and surrounded by walls. In the warfare which continued from century to century between the Mussulmans and Christians, the former at first had the upper hand; they seized Spain and Sicily,

and even for a considerable time occupied the "Moorish" mountains on the French coast, while their expeditions penetrated into the valleys of the Garonne, the Loire, and the Rhône, to the very heart of the Alps. Yet in the Middle Ages the war had already been transferred to Africa during the Crusade of St. Louis, and although it ended in disaster, the Spaniards followed up the conquest of Grenada by seizing Oran, Bougie, Mostaganem, and Algiers; the inland town of Tlemcen even became tributary to them, and it seemed as if Spain, after being so long in the power of the Arabs and Berbers, were about to vanquish them in its turn. But the tide of victory was again arrested, and notwithstanding his assumed title of Africanus, Charles V. proved less successful in Mauritania than his ancestor Ferdinand. His fleet was destroyed by a tempest, and from that time most of the European powers paid a tax to the Turks of Algiers to protect their trade; and when they refused this shameful tribute, they found it necessary to blockade and bombard the coastland towns of Algeria, or else to pay heavy ransoms to liberate the captives of their respective nations. The war was continued between the Barbary states, and Europe and its outport of Malta, under a thousand different forms. In the end the advantage remained in the hands of the European nations, for the Turks failed to acquire any footing on the northern shores, whilst on the coast of Africa many a trading place, such as Tabarka and Calle, fell into the hands of the Christians, and several islets and fortified peninsulas, such as the presidios of the coast of Morocco, and even the town of Oran, were occupied by Spanish garrisons till the year 1791.

The decisive blow was delivered in 1830. The town of Algiers, in which were amassed all the treasures of the corsairs, fell into the power of the French; then other places on the coast were successively occupied and, by the very force of circumstances, in spite of the uncertain plans, political changes, and temporary checks, the conquest of the interior was gradually accomplished. The whole of Algeria, which is much larger than France, has been annexed as far as the border land between the settled districts and the domain of the nomad tribes. Tunisia has experienced the same fate; and if Morocco, separated from the province of Oran by a badly defined frontier, has not yet become European territory, the cause is due to the jealousy of the rival Powers. However Spain, after a long period of inaction, has again assumed an aggressive attitude, occupying a strip of territory on the Atlantic seaboard; while the French troops have often crossed, at Uja, the Shott Tigri and Figuig, the conventional line of the Moorish frontier, in order to curb the hostile border tribes. Morocco may already perhaps be considered as politically annexed to Europe, and the people themselves are the first to recognise their inevitable destiny.

Henceforth connected with Europe, Northern Africa has acquired considerable importance in contemporaneous history, and Algeria especially participates in the intense life which now animates civilised society. After Egypt, Algeria of all other African regions has been the theatre of events whose influence has been most far-reaching. Next to Cape Colony, Algeria is the largest centre of European populations, and in spite of thirty years of almost incessant wars, it has,

relatively speaking, even been more rapidly peopled by European immigrants than the English possessions in South Africa. It is not an industrial field or an immense farm like Java, or British India, which are often wrongly spoken of as "colonies," and too often also held up as examples to the military powers of Europe. Like Canada, although under other political conditions, it has become a second France beyond the seas. Taken altogether, the work of the conquering nation, mixed with good and ill and very complicated in its effects, like all human works, has not had the general result of diminishing and debasing the natives. There are doubtless men who demand that the historical law of an eye for an eye

Fig. 64.—Gradual Conquest of Algeria.
Scale 1 : 12,000,000.

should be meted out to the Arabs, and that they should be "driven" towards the desert, as they formerly drove the Berbers towards the mountains. In many parts of the Tell and the outskirts of the towns these processes have already been even put in practice, in an indirect but legal way, "by means of expropriation for the public benefit." But most of the Arabs are still in possession of their lands, and what remains to them would be quite sufficient to support them if it belonged to the peasantry themselves, and not to great chiefs who really own it in the name of the tribe. In spite of the injustice and cruelties which accompany every act of

sudden invasion, the situation of the Arabs has not grown worse, while that of the Kabyles, Biskri, and Mzabites has even improved, thanks to the stimulus given to their trade industries. Algeria has received much more from France than she has returned, and the people of the country, though not treated as equals, have in many respects gained more liberty since the period of Turkish rule. Many of the European settlers themselves have endeavoured to vindicate their right to fellow-citizenship with the Arabs and Kabyles by their industrious habits and perseverance in founding new homes under the most adverse circumstances, in the midst of fanatical and hostile populations. Thanks to their indomitable energy and patience, the land may be said to have been subdued far more by the plough than by the sword.

In this peaceful, though none the less arduous, conquest of the soil, the non-French colonists took at first the largest share, and even still scarcely yield to the French settlers in agricultural enterprise. With the Provençals, and others from the south of France, they have helped to solve the vexed question of the acclimatisation of Europeans in the Barbary States. Immigrants from the north of France and Central Europe are less capable of resisting the unfavourable climatic influences, and amongst them the mortality is normally higher than the birth-rate. If the settlements were recruited exclusively from these sources, the work of colonisation would have to be incessantly renewed. But the Catalonians, Provençals, Genoese, and other southern peoples find little inconvenience in migrating to the regions south of the Mediterranean, where they still meet the same flora and fauna, and in some respects even the same ethnical elements, as in their native land. As in the time of the Iberians and Ligurians, kindred races continue to settle on the north coast of Africa, where the difference of latitude is largely compensated by the greater elevation of the land. The work of assimilation is thus being effected by the Mediterranean races, and to them will mainly be due the development of the New Algeria, with its cities, highways, industries, and general European culture.

At the same time the work of civilisation has hitherto been carried out in a desultory and perfunctory manner. The country might even have been abandoned altogether, if the monarchy, threatened in the streets of Paris by the Republicans, had not found it convenient to get rid of its enemies by banishing them to the Algerian border-lands. Even before the July revolution, the conquest of Algeria seemed to offer a career for these unruly elements, and in the year 1831, the Government succeeded in enlisting as "volunteers" for this service some four thousand five hundred Parisian malcontents. Thus the new conquest became a place of exile before it developed into a colonial settlement.

The conquest itself continued to tax the resources of the mother country, and its settlement has already cost at least £240,000,000, besides the lives of several hundred thousand soldiers and colonists. It may even be asked whether this constant drain of men and treasure may not have been the primary cause of the late disastrous war with Germany, followed by a rectification of frontier to the advantage of that Power.

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# ALGIERS AND ORAN.

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The expressions "New France" and "African France," often applied to Algeria, are in many respects fully justified. The French have undoubtedly already acquired a firm footing in this part of the continent, where they have introduced their language and their culture. French towns and villages have sprung up, not only along the seaboard, but in every part of the country, which is now intersected in all directions by highways running to the verge of the desert. The work accomplished by the French in half a century may be compared with that which resulted from seven centuries of Roman occupation. Thanks to the railway, telegraph, and other appliances of modern science, they have rapidly spread over the whole land, penetrating southwards to the oasis of El-Golea, 180 miles beyond Jelfa, apparently the last outpost of the Romans towards the Sahara. The political annexation of the country to Europe may already be regarded as an accomplished fact. The native elements, broken into fragments, differing in speech and origin, and separated by great distances, have ceased to be a serious menace to the European population, which, if still inferior in numbers, forms a more compact defensive body, commanding all the large towns, arsenals, strategical points, and resources of modern industry.

From the geographical standpoint, the annexation of Algeria to the known world has already made considerable progress. Works of all kinds relating to the colony are reckoned by the thousand, and amongst them are many of great scientific value. The great topographical atlas, of which several sheets have already appeared, may be compared with similar works issued by the European states. Geographical exploration is being continually supplemented by a scientific study of the soil, and the provisional geological charts will soon be replaced by more exhaustive sheets, depicting the series of stratified formations in the fullest detail. Some blank spaces are still visible on the maps, especially about the Mzab district. But even here the itineraries are beginning to intersect each other in various directions, and the work of exploration, begun by Duveyrier, Soleillet, Largeau, Flatters, and others, will soon be systematically continued in the direction of the Sudan. The ancient history of the country is also being restored by a study of the local inscriptions and other monuments that have escaped the ravages of time.

## Physical Features.

The relief of Algeria is characterised by a remarkable simplicity of outline. Forming a nearly equilateral four-sided figure, it contrasts even with the conterminous regions of Marocco and Tunis in the almost rhythmical harmony of its undulations. Between Nemours and Algiers the normal direction of the coast is south-west and north-east, and the same direction is followed by all the mountain ranges, valleys, and plateaux occupying the whole space, 180 miles broad, between the Mediterranean and the Sahara. At the time of the conquest it was supposed that this space was traversed by two main ranges, the Great Atlas in the south, and the Little Atlas in the north. But this double orographic system has no existence,

the surface of the land being characterised not by continuous well-defined chains, but by parallel ridges frequently interrupted by intervening depressions.

In the west a coast range running close to the sea is broken at intervals by semicircular inlets excavated by the waves. Farther east the work of erosion has been still more extensive, and here the coastline runs almost uniformly west and east, so that the parallel ranges running south-west and north-east develop a regular series of headlands, all of which project in a north-easterly direction seawards, and shelter from the north and north-west winds several seaports, such as Dellys, Bougie, Collo, Stora, Bona, and others. These highlands contract gradually towards the east, from a breadth of 210 miles under the meridian of Oran, to 135 under that of Constantine. The Sahel, as the western coast ranges were formerly collectively known, is separated from the other uplands by a broad depression disposed parallel with the Mediterranean, and stretching with little interruption from the heights of Oran to the foot of the Miliana hills.

The escarpments of the plateau, which on the west follow in uniform parallel lines south of this depression, and which on the east terminate in a series of headlands along the coast, are skirted southwards by numerous dried-up lacustrine basins, such as Eghris south of Mascara, Beni-Sliman between Medea and Aumale, and Wed Sahel south of Jurjura. Increasing in altitude as they recede from the coast, these plains form the outer terraces of the upland plateaux of Central Algeria. The Jebel, a term applied collectively to the border ranges, [illegible] are exceeding 6,000 feet, except in the Jurjura district, constitutes, with the m[illegible] zone, the so-called "Tell," or "hilly country;" but in these uplands are [illegible] all the fertile valleys and grassy slopes, whence the absurd identification of the word *tell* with the Latin *tellus*, as if this region were the productive land in a pre-eminent sense. At the same time, such is the fertility of its soil, and the abundance of the rainfall, that a population of some fifteen millions might easily be supported on the thirty-eight million acres of the Tell.

Towards the ill-defined frontier of Morocco, the plain enclosed between the northern highlands and those skirting the Sahara is at least 120 miles broad, with a mean elevation of about 3,500 feet. Perfectly level in appearance, it really forms a slightly depressed cavity, where are collected the spring and rain waters, replaced in the dry season by extensive saline tracts. Farther east, the gradually contracting upland plain is divided by central ridges into several distinct basins, and towards the Tunis frontier it loses altogether the character of a zone of separation between the northern and southern highlands. In this part of Algeria the surface is almost exclusively occupied with a succession of ridges all disposed in the normal direction from south-west to north-east.

From Morocco to the neighbourhood of Batna the system of southern border chains retains its distinctive character throughout the greater part of its course, and it was to these ranges between the upland plateau and the depression of the Sahara that was formerly applied the title of the "Great Atlas." Yet their mean altitude does not exceed that of the northern highlands, although one of their summits in the Jebel Aures forms the culminating point of Algeria. The true natural limits

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of the country should be the Sahara itself, or the waterparting between the Igharghar and Niger basins, or else the Niger itself as far as Upper Senegal. But restricting it to the almost geometrical quadrilateral between the sea and the desert, Algeria has an area of about 120,000 square miles, or somewhat less than half of the territory virtually occupied by the French. Their outposts stretch far beyond the natural limits of the southern uplands, and are distributed irregularly over considerable tracts of the desert. Thus El-Golea, which now pays a regular tribute, is 420 miles in a straight line south of Algiers, and 240 from the nearest mountains of Laghwat. French expeditions have often reached the Ksurs of the Sahara, and even the Figuig district, without, however, annexing this region, out

Fig. 65.—Ergions of the Mountains near Tiaret.

Scale 1 : 200,000.

of regard for the prior claims of Morocco. The frontier in this direction is far from clearly marked, no natural line of demarcation having been followed in determining the political confines, which by the treaty of Tangier, in 1844, were laid down at haphazard across mountains, valleys, and tribal districts.

In the western province of Oran the prevailing formations are Jurassic, which also form the chief strata throughout the plateau. In the east especially, these rocks underlie the chalk, which in its turn is overlaid in the north by Miocene and Pliocene formations. Alluvia of various epochs, and of vast depth, occupy the river valleys, and in a great part of the plateau cover both the Jurassic and cretaceous rocks. The Triassic and older schists are represented by a few isolated

masses, while in the neighbourhood of the coast granitic peaks crop out above the surrounding Miocene layers. Gneiss prevails on the northern slopes of the Jurjura, and the headlands projecting seaward consist largely of trachytes and basalts. Minerals, marbles, gypsum, salt, and thermal springs occur in many places, constituting for Algeria a considerable reserve of future wealth.

According to M. Bourdon the coast near the mouth of the Shelif shows signs of upheaval. Thus the cliffs near Karuba and at other points are disposed in distinct terraces or beaches, strewn with shells of the same species as those of the surrounding waters. The coastlands are also subject to frequent earthquakes, the effects of which have been felt in Oran, Tenes, Algiers, and other towns. Many of the headlands consist of eruptive rocks, and it seems probable that the whole seaboard, like that of Tuscany and Naples, follows a line of fault in the terrestrial crust.

In few regions are the traces of former erosion more evident than in Algeria; but it is difficult to say whether they are to be attributed to the action of running waters or of snows and glaciers; for there can be no doubt that Algeria also had its glacial period, of which clear indications are still visible on the northern slope of the Jurjura range. The work of erosion is still going on incessantly, especially in the Dahre district, where the hills are formed of a compact mass of very argillaceous white clay, without any appearance of stratification. Similar phenomena are also very active south of the Shelif Valley, in the argillaceous and marly hills skirting the plateau. But the crests are here crowned with sandstone layers from 30 to 130 feet thick, which resist atmospheric influences much longer than the underlying strata.

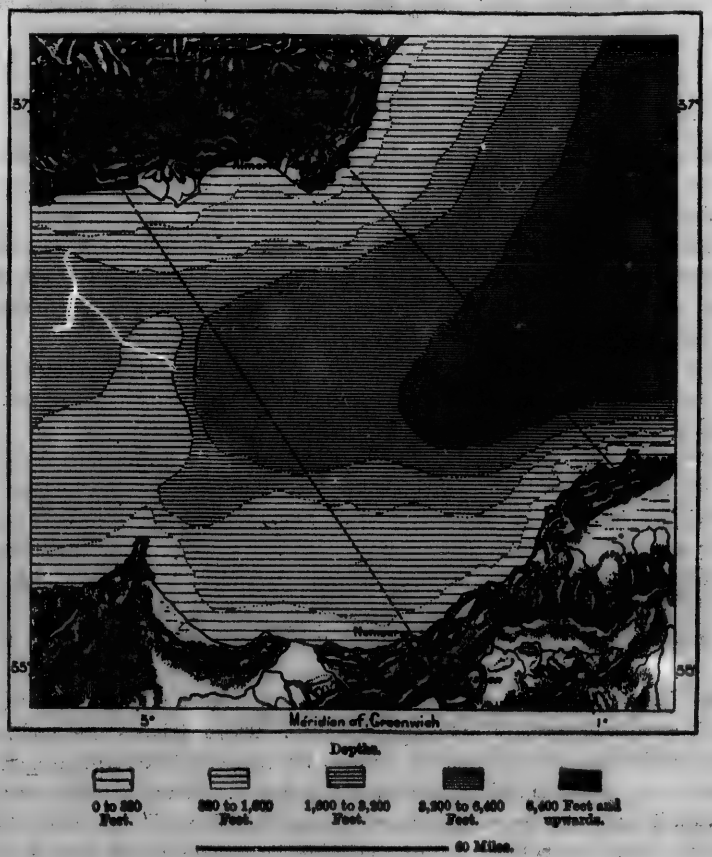
North of the Sahara the great Algerian quadrilateral, consisting almost exclusively of plateaux and highlands, nowhere presents any conspicuous heights dominating the surrounding masses. The four chief groups of the Warsenis and Jurjura in the north, and the Amur and Aures in the south, are grouped in a sort of symmetrical order, none of them constituting a central nucleus distributing the running waters in well-defined basins. Thus no river valley is found which, by its exceptional fertility or favourable position for intercourse, might have become a natural centre of attraction for the whole country. Hence Algeria is divided into as many distinct territories as there are isolated upland regions and river basins, and it is this disposition of the land that has at all times rendered its conquest so difficult. At present a centre of attraction denied it by nature is being gradually created by artificial means at the city of Algiers, with its new harbour, routes, and railways radiating in all directions.

### The Coast Ranges.

In the extreme north-west the Trara coast range, whose gorges afford an outlet to the Tafna river, has a mean altitude of less than 1,650 feet, culminating in the limestone peak of Mount Filhausen (3,860 feet), to the south-east of Nemours. From this, as well as from several other summits between Oran and the Morocco

frontier, a view is commanded in clear weather of the crests of the sierras on the opposite coast of Spain, at a distance of no less than 168 miles. It thus became possible to connect the network of Algerian triangulation with that of the Iberian peninsula without passing through Marocco. The four points chosen for the connecting quadrilateral were Mulhacen in the Sierra Nevada, Tetica in the Sierra de los Filabres, at the south-east angle of the peninsula, Filhausen in the Trara

Fig. 66.—Junction of the Geodetic Lines between Algeria and Spain.
Scale 1 : 2,500,000.




range, and Msabiha in the neighbouring Oran group. The chain of triangles is now continuous from the northernmost islet in Shetland to the 34th parallel of latitude in Algeria, and will soon be extended far into the Sahara, forming the largest arc of the meridian that has hitherto been astronomically measured on the surface of the globe.

South of the Great Sebkha, at the foot of the Oran coast range, stretches the cretaceous Tessale range, terminating in the Jebel Tafarawi (3,540 feet), which is skirted north and south by the railway between Oran and Sidi-Bel-Abbes. Farther east the coast chain, interrupted by the extensive bay sweeping round from Arzeu to Mostaganem, reappears east of the Shelif river in the hilly Dahra plateau, with a mean elevation of 1,600 to 2,000 feet. The Dahra system, rising gradually eastwards, culminates in the two Mounts Zakkar (5,000 and 5,200 feet.) Farther on, these uplands fall abruptly towards the Mitija valley, but are continued east of the Shenua headland (3,000 feet) by a narrow ridge, which is separated eastwards by the winding Mazafran river valley from the Sahel, or terminal heights of the Algerian coast range.

### The Southern Ranges.

South of the coast range, the first important heights on the Morocco frontier are those of Tlemcen, one of the most regular orographic systems in Algeria. Here the highest point is Mount Tenushfi (6,120 feet); but several other crests exceed 5,000 feet, and the route from Tlemcen to Sebdu, although following the lowest level, maintains an elevation of 4,800 feet. Far to the south rise the crests of the Arisha chain, dominated by the pyramidal limestone peak of the Mekaidu, 4,900 feet high.

The valley of the Sig, east of the Sidi-Bel-Abbes, is limited southwards by the Beni-Shugran mountains, forming a prolongation of the Tlemcen Atlas, and culminating in the Daya and Beguira peaks, 4,630 and 4,660 feet respectively. This system is continued eastwards by the Warsenis (Wansherish, Warensenis), one of the loftiest ranges in Algeria, whose chief crest, terminating in a double peak, rises to a height of 6,600 feet. These highlands, which are pierced by streams flowing northwards, and skirted on the east by the deep valley of the Shelif, present a less symmetrical outline than the western groups. Abd-el-Kader had established his chief strongholds amid their inaccessible recesses, and in their turn the French have erected fortresses to command the lofty plateaux and passes leading to the Tell.

Still less uniformity of relief is presented by the border ranges of the "Little Atlas" stretching south of the Mitija Valley. These uplands are broken by ravines, plains, and broad transverse fissures into several distinct groups, all disposed in a line with the main axis of the Atlas system. Here the Gontas, Musaia, Zima, Bu-Zegza and other rugged masses are approached by military routes winding through narrow gorges like those of the Shiffa, or ascending their steep slopes in zigzag lines, like those of the highway between Algiers and Aumale, which attains a height of 3,300 feet at the culminating point of the road leading to the territory of the Beni-Muça tribe. The famous Tenia, or "Pass" in a pre-eminent sense, which was the scene of so many conflicts in the early years of the conquest, traverses the Musaia hills at an altitude of 3,470 feet. For the whole of this orographic system M. Niox has proposed the collective name of the "Titteri

Mountains," the old province of which they form a part having been so called before the French occupation.

One of the best-defined ranges in Algeria is that of Jurjura, the *Mons Terratus* of the Romans, which runs east and north-east of the Titteri hills. Although its highest point is only 7,680 feet, or somewhat less than the Sheliya of Aures, it rises to a greater relative height above the plains than any other range in the country. Seen from the north it presents an imposing appearance, being here skirted throughout its whole length by a deep wooded and cultivated valley, which forms a pleasant foreground to its rugged and snowy peaks. In this direction the snows are more abundant than on the opposite slope, and in the depressions traces

Fig. 67.—Ancient Glaciers of the Haiser Mountains.

Scale 1 : 125,000.

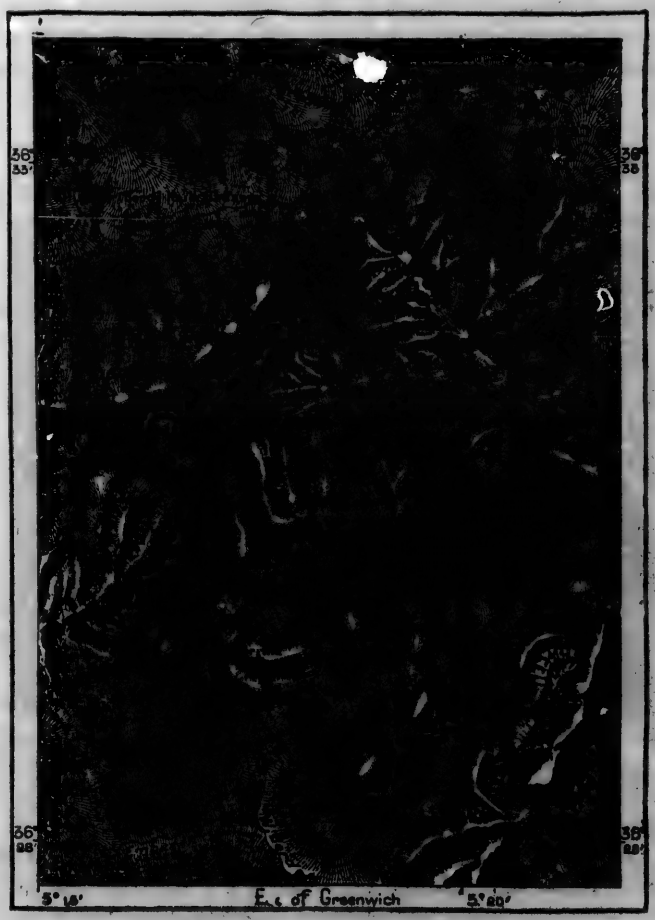
are even seen of avalanches. At some former geological epoch glaciers filled the gorges of the Haiser and Lalla-Khedrija slopes, and a large terminal moraine is still visible in the upper valley of the Wed Aissi. Elsewhere also are seen indications of the lakes which once flooded the depressions, but which have since run dry. Of all the Algerian uplands the Jurjura highlands abound most in running waters, rich vegetation, cool and healthy valleys sheltered at once from parching southern and cold northern winds.

The mountains of Upper Kabylia are disposed in such a way as to form a regular semicircle round the border of this region. Coast ranges, such as the

basaltic promontory of Jinet, the limestone Dellys chain, and the crests of Azeffun, complete this extensive orographic system, which is broken only by difficult passes and the route opened in the north-west between the Lower Seban and Isser river valleys. While Great Kabylia from Bougie to Menerville is completely encircled

Fig. 68.—Gorges of the Wed Agrun.

Scale 1 : 80,000.




3,000 Yards.

by a good road, which will soon be supplemented by a railway, the heart of the country is pierced only by a single carriage route, constructed in the year 1885.

East of the Sahel Valley begins the partly volcanic Babor range, a continuation of the Jurjura system, over 180 miles in length, with peaks covered with snow till

the beginning of summer. Such are the Tababor (6,550), the Great Babor (6,560

Fig. 60.—View taken in the Shabet-el-Akra Route.

feet), and farther north the Jebel Adrar (6,740). Immediately to the west of the

last named lies the deep gorge of Shabet-el-Akra, excavated by the waters of the Wed Agriun to a depth of many hundred feet, and utilised by one of two carriage routes which cross the Babor range in the direction of the coast. The hilly region stretching thence northwards to Jijeli and Collo is one of the least accessible in Algeria.

South of the Jurjura and Babor systems, the Jebel Dira is continued by the Bibân, or "Gates," a name due to the breaks through which, during the rainy season, the surface waters of the plateau find an outlet to the plains. Amongst these breaks noteworthy are the "Iron Gates," known respectively as the Great and the Little Gate, the former of which is now traversed by the route and the railway between Algiers and Constantine. The Little Gate, lying nearly 3 miles farther east, also forms an easy roadway, and here the geologist may conveniently study the black limestone rocks, which assume the appearance of colossal organs, buttresses, ramparts, and other fantastic shapes. East of the Gates rises the Jebel Sattera, an extinct volcano, whose crater is still strewn with scoriæ and pumice.

The highlands lying south of the Bibân range have been broken by erosive action into numerous distinct groups encircled by almost horizontal depressions. Here the loftiest summit is the Jebel Maadhid (1,630 feet), beyond which point the heights gradually fall, while the intervening depressions merge in plains extending towards Constantine. In the neighbourhood of this town the hills reappear, but seldom attain an elevation of much over 3,000 feet. Towards the north-east the northern border ranges terminate in the bold headland of Edugh (3,350 feet), on whose last spur stands the citadel of Bona. Cape Garde, which encloses the roadstead, takes the normal direction from south-west to north-east, while the Cape de Fer headland projects farther west in the contrary direction. But like the Collo hills, this bluff is of volcanic origin, forming no part of the general orographic system.

The ranges skirting the upland plateaux on the south begin on the Morocco frontier, some 200 miles from the coast. North of Figuig, the highlands separating the plateaux from the Sahara form a series of small groups falling gradually towards the north-east, and collectively known as the Ksur range, from the now partly destroyed strongholds guarding their passes. But each group, called by the Arabs *Kiss* ("Fort"), or *Kelaa* ("Castle"), has its special designation, and in fact several present the appearance of fortifications. The chief summits are the Mais (6,170 feet), north-west of Figuig; Beni-Smir (6,600) north of the same oasis; Jebel Mzi (7,320) south of Aïn-Sfissifa, all commanding a view of the sandy wastes of the Sahara.

Beyond the Ksur groups several parallel ridges, such as the Bu-Derga, Ksel, and Tarf, form the western section of the Jebel Amur, or "Mountain" in a pre-eminent sense, both terms having the same sense, the first in Arabic, the second in Berber. Viewed as a whole, the Amur forms a plateau cut up by torrents flowing some to the Algerian shotts, others to those of the Sahara. It thus constitutes a true waterparting between the Mediterranean basin and those of the Jeddi and

Igharghar. Its central division is occupied by the so-called *gada*, large stone tables with steep vertical cliffs flanked by long taluses. Round these great chalk masses wind deep gorges communicating with each other by fissures in the plateau. The Tuila Makna, their culminating point, connecting the Amur with the Geryville highlands, has an elevation of 6,330 feet. But, if not the highest, the most imposing crests are those rising in the south above the terminal spur known as the Kef-Guebli.

East of the Amur system the highlands fall gradually in elevation and contract in width, being reduced north-west of Biskra to a narrow ridge, which scarcely separates the Hodna depression on the north from that of Ziban on the south. Here

Fig. 70.—Cape de Fer.
Scale 1 : 110,000.

the railway from Batna to Biskra is able to cross the hills without tunnelling, by following the gorge of the Wed-el-Kantara down to the southern plains. But this line has to describe a great bend round the western extremity of the Jebel Aures, the loftiest range in Algeria. This system, however, lacks the symmetry of outline characteristic of most other Algerian uplands. The highest northern crests deviate somewhat from the normal direction, being gradually inclined from west to east, and on the whole presenting the form of a slightly opened fan. In the northern range towers Mount Sheliya, the giant of the Algerian highlands, whose supreme peak, the Kelthum (7,760 feet) exceeds by some yards the Lalla-Khedija, in the

Jurjura range. From its easily ascended summit a vast prospect is commanded of the northern plateaux and shotts between Batna and Aïn-Beida, while on the southern horizon is visible a long blue streak marking the skirt of the Sahara.

Eastward the Aures system is continued by the Jebel Sheshar and the Nememsha mountains, which, like the isolated ridges of the Tebessa plateau and Tunisian frontier, are noted for their natural fastnesses, often transformed into places of refuge by the natives. These south-eastern highlands of Algeria have a mean elevation of from 4,000 to 4,500 feet, the Sheshar range culminating in the Ali-en-Nas, 6,250 feet high.

South of the Algerian border chains the uplands terminate abruptly in extensive plains covered with Quaternary alluvia, and forming a sort of strait between Mauritania and the Sahara highlands. Southwards the ground rises almost imperceptibly towards the Ras Shaab heights, which run south-west and north-east, parallel with the Atlas system, and which in their highest peak attain an elevation of 2,830 feet above the Laghwat oasis. Beyond this point stretches the Sahara, which here consists mainly of Pliocene formations, originally deposited as alluvia by the running waters, and afterwards, doubtless, distributed by the winds, like the yellow earth of North China. In some places the beds of this friable soil have a thickness, according to M. Rolland, of 1,000 feet. Nevertheless, they are here and there broken by isolated masses of cretaceous rocks, some of which occupy a considerable space. The most extensive is the so-called Mzab plateau, which, although separated from the Algerian uplands by a tract of Quaternary alluvia, may be regarded as a sort of isthmus connecting the Mauritanian highlands with the Devonian plateaux of the interior of the Sahara, and with the crystalline rocks of the Jebel Ahaggar.

### Rivers of Algeria.

Although it receives from the rain-bearing clouds a quantity of water at least equal to that carried off by such a river as the Nile, Algeria does not possess a single navigable stream. Its internal navigation is limited to a few skiffs and rowing-boats on the Seybouse. The development of large fluvial basins is prevented by the very relief of the land, the coastlands forming a narrow strip between the plateaux and the Mediterranean, while towards the south most of the streams flowing to the Sahara have their source on the inland slopes of the border chains.

The total area of Mediterranean drainage may be approximately estimated at 80,000 square miles. All the rest of Algeria is distributed over closed basins, where the water either evaporates in saline lagoons, or else runs out even before reaching the central depression. In fact, nearly all the Algerian streams are dry for a great part of the year, their beds presenting in the uplands nothing but bare rock or pebbly channels, in the lowlands stripe of sand lashed by every breeze into whirlwinds of dust. The rivers, which retain a little moisture in summer, are closed at their mouths by compact sandbars, which present a solid path to pedes-

trians and riders. Nevertheless, the weds are not so completely exhausted as they seem to be, for below the dry surface there is often an underground bed, in which the water oozes through the sand and develops small pools above such obstacles as rocky ledges or artificial dams.

In the extreme north-west, the Marocco frontier is marked by the little Wed Ajerûd. But the first important stream is the Tafna, which receives some affluents from Marocco, but whose farthest source is in the Tlemcen hills, within the Algerian frontier. Although not more than 90 miles long, the Tafna has succeeded in excavating a channel through a series of gorges, through the Tlemcen, the Traras, and some intervening ridges. The Isser, its chief tributary, pursues a similar course from its rise on the southern slope of the Tlemcen range to the confluence.

Formerly the extensive low-lying plain skirted northwards by the Oran coast ranges was flooded, and of this old lacustrine basin there still remains the great sebkha of Misserghin, or Oran, besides some other saline depressions and marshy tracts fed by the Sig and the Habra. These two streams, jointly forming the Macta, which flows to Arzen Bay, rise on the northern scarp of the Central Algerian plateau, and reach the plain through a series of abrupt windings in the transverse fissures of the intervening hills.

The longest river in Algeria is the Shelif, whose farthest headstream, the Wed Namus, rises in the Jebel Amur, beyond the whole region of central plateaux. After its junction with the Nahr Wassal from Tiaret, it pierces the northern border chains through the Boghar defile, and flows thence between the Warsenis and Dahra ranges to the coast a little to the north of Mostaganem. But although it has a total course of at least 420 miles, the Shelif has a smaller discharge at low water than many Pyrenean torrents flowing to the Garonne.

The Masafran, with its famous affluents the Shiffa, the Harrash, and the Hamiz, which water the Mitija district, are all mere streamlets, indebted for their celebrity to their proximity to Algiers, to the battles fought on their banks, the towns and fertile tracts occupying their basins. More voluminous are the Isser, whose lower course forms the western limit of Great Kabylia, and the Seban, fed by the snows of the Jurjura highlands. The Wed Sahel, or Summan, which has a longer course but smaller discharge than the Seban, rises to the south of the same mountains, flowing thence north-east to the Bay of Bougie.

In spite of its name, the Wed-el-Kebir, or "Great River," which reaches the coast between the Jijeli and Collo headlands, is great only relatively to the small coast streams. One of its affluents, the Bu-Merzug, or Ampsagas of the ancients, for a long period formed under the Romans the frontier line between the province of Africa and Mauritania. West of this Wed-el-Kebir of Constantine, two other rivers bear the same name, one rising in the Guelma hills, and flowing to the Mediterranean south of Cape de Fer, the other descending from the Khumirian highlands in Tunisia.

Between these two eastern kebirs flows the far more important Seybouse, which falls into the Gulf of Bona with a more constant discharge than any other

Algerian river. The sources of the Sherf, its chief headstream, are intermingled on the Aïn-Beide plateau with those of the Tunisian Mejerda and its affluent, the Wed Meleg. At a former geological epoch the plain now traversed by the lower Seybouse formed a marine inlet, of which the shallow Lake Fetzara is a remnant. Between the sea and the eastern Wed-el-Kebir, at its mouth known as the Mafrag, the town of La Calle is encircled by a girdle of three lakes—the Guera-(Guraa)-el-Melah, or "Salt Lagoon;" the freshwater Guera-el-Ubeïra draining during the floods to the El-Kebir; and the Guera-el-Hût, or "Fish Lagoon," which reaches the sea through the sluggish and sedgy El-Mesida.

Except the narrow strips drained by the Upper Shelif and the Mejerda, with

Fig. 71.—Lakes of La Calle.

Scale 1 : 200,000.

its tributary, the Meleg, the whole of the Algerian plateau region is comprised within the region of closed basins, which were formerly united, and which would again be connected in one system with a more abundant rainfall and less elevated temperature. The larger basins take the name of *shotts*, less extensive freshwater or brackish depressions being known as *dhayas*, while the term *ghedir* is applied to muddy swamps or meres. Most of the shotts are encircled by rocky banks or cliffs 50 or 60 feet high in some places, but now separated from the lacustrine waters by intervening saline beaches or strips of crumbling gypsum mixed with sand. Such is the aspect of the Shott Gharbi, or "Western Shott," on the Morocco frontier. The Shott Shergin ("Eastern") has a total length of nearly

120 miles in the central part of the plateau. It is divided by the Kheider isthmus into two basins, of which the western has an extreme breadth of 15 miles.

East of the Shelif the plateau region presents nothing but small basins, such as the Dhaya Dakhla, north of the Ukaït range, and south of that range the eastern and western Zahrez, which according to one estimate contain some six hundred million tons of salt. North-east of Bu-Sâda stretches the extensive Shott-el-Hodna, which at a former geological epoch was certainly an Alpine lake. Farther east are some smaller sebkhas, the most important of which is the Tarf, whose waters attain the highest possible degree of saturation, or twenty-seven per cent.

Most of the streams flowing from the southern border chains towards the Sahara are absorbed by irrigation works soon after leaving the mountain gorges. Some, however, flow from oasis to oasis for a long distance from the hills. In the west these wadies take a southerly course; but near the Tunisian frontier the vast basin of the now-dried-up Igharghar is inclined in the opposite direction towards the Shott Melghigh depression. Lofty uplands lying in the Sahara far to the south of Algeria give to the whole of the intervening region a northerly tilt, and this is a point of primary importance in the physical geography of the desert. While the running waters formerly flowed in the east, either towards an "inland sea," or towards the Gulf of Cabes, they drained in the west in a southerly direction either to the Niger, or even directly to the Atlantic by trending round to the west. Although the problem is not yet solved, the reports of recent explorers render the former hypothesis the most probable.

Within the present limits of Algeria, all the other streams rising on the escarpments of the plateau run dry in the sandy dunes which lie some 60 miles farther south. Such are the Wed Nemus, which rises in the neighbourhood of Tiut; the Wed-el-Gharbi; the Wed-es-Segguer, flowing from Brezina, south of Geryville; the Wed Zergoûn, fed by the torrents of the Jebel Amur; the Wed Lua, skirting the east side of the Mzab plateau. The other streams of this region flow to the Wed Mzi, the chief branch of the Wed Jeddi, which forms a geological limit between the cretaceous plateaux and the sands of the Quaternary plains. After a course of about 300 miles, the Jeddi merges in the vast depression of the Shott Melghigh. Like other rivers of the Sahara flowing over rocky beds, it is subject to sudden and formidable freshets, the dry channel at the confluence of the Wed Biskra being sometimes flooded to an extent of 6 or 7 miles from bank to bank in a few hours. The Wed Msif, also in the Hodna district, suddenly assumes the proportions of a river nearly 2 miles wide, sweeping away escarpments and whole flocks of sheep in its impetuous course.

Other wadies coming from the gorges in the Aures and Sheshar mountains, or rising in the desert itself at the foot of the rocky escarpments, converge towards the depression of the shotts, without always reaching it. By far the largest of these dried-up watercourses is the Igharghar, which has its farthest headstreams in the Jebel Ahaggar, and which develops a vast channel 1 to 6 miles wide, and large enough to contain the waters of a Nile or a Mississippi. In some places it is completely obliterated and choked with shifting dunes to such an extent that the

general slope of its bed can no longer be recognised. But its old course is still

Fig. 72.—Cliffs of the Igharghar.—View taken from the North of Tamasinin.

preserved by tradition and indicated by the natives, who now utilise it as a caravan

route. Its chief affluent, the Wed Miya, resembles the main stream in its general appearance, presenting a series of small basins, depressions, and shotts, interrupted by shifting sands. But the waters still flowing below the surface continually increase in abundance towards the confluence, where a well-marked depression begins, in which a succession of shotts, wells, pools, and springs, preserves the character of a watercourse. Such is the valley now known as the Wed Righ (Rhir). The confluence itself is indicated by a number of perennially flooded sebkhas, fringed by the palm groves of Temacin.

## The Shotts—Artesian Wells.

The Shott Meruan, which forms the natural basin of all these old streams from the south, is connected with the Shott Melghigh proper only by a narrow channel,

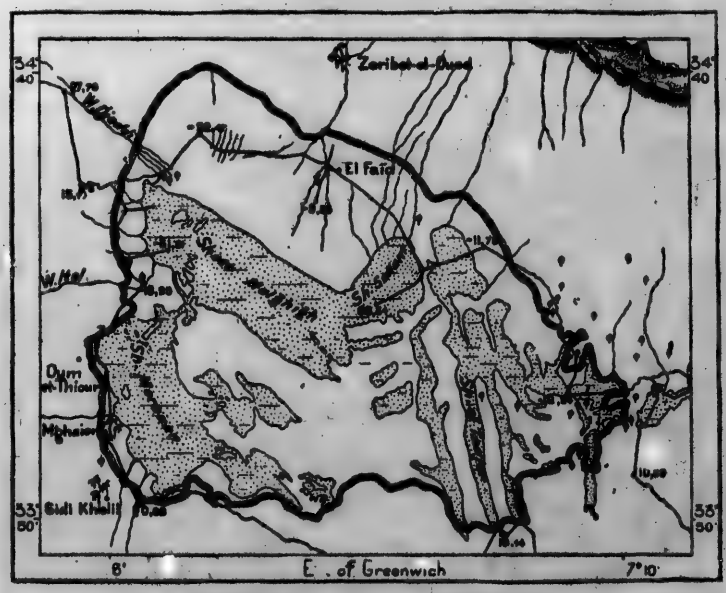
Fig. 73.—Valley of the Wed Miya, between the Gabaa El-Onkseb and the Gabaa T-el-Beida.

and ramifies eastwards in secondary sebkhas, which rise and fall according to the rainfall and greater or less evaporation. The Shott Melghigh, forming the northern division of the depression, terminates eastwards in the Shott Sellem, beyond which follow several others disposed north and south, and separated by a tongue of land from the Tunisian Shott Gharsa. This basin itself is separated only by Jerid from the vast sebkhas which stretch eastwards to the Isthmus of Gabes. At first sight it seemed natural enough to regard the whole of this lacustrine system as the remains of an ancient inlet, into which the mighty Igharghar discharged its waters, and this view was generally accepted before the

true relief of the land had been determined by careful surveys. It has now been made evident that neither in historic times, nor even in the present geological epoch, did the Igharghar reach the Tunisian shotts, which are separated from each other and from the sea by two rocky sills, showing no trace of ever having been subject to the action of water. The general slope of the land is also opposed to such a view, being inclined not seawards, but in the opposite direction, towards the inland lakes. The salts of the shotts are of diverse composition, differing from those of sea-water, and in certain places containing more sulphate of soda than

Fig. 74.—Shott Melghigh and Projected Inland Sea.

Scale 1 : 1,500,000.




marine salt. Nevertheless saline incrustations are found in some of these basins, especially the Shott-el-Gharsa, which yields salt of a very fine quality.

The great Algerian shott and surrounding saline depressions lie below sea-level, whence the hasty conclusion that by connecting them with the Gulf of Cabes, the Sahara itself might be converted into a vast inland sea. Recent measurements have shown that the area of the whole region lying at a lower level than the Mediterranean scarcely exceeds 3,300 miles. Hence the idea of flooding the Sahara, advocated especially by Rudaire, can never be realised in our days.

A more practical project, already begun with the happiest results, aims at recovering the reservoirs of water accumulated below the surface, and utilising them for the extension of the old, or creation of new, oases. Although from the remotest times the natives have carefully husbanded their supplies, many sources

Fig. 75.—Artesian Wells of Ziban and the Wed Rhir.

Scale 1 : 2,250,000.

have completely dried up, and numerous places are known as Ain-Mita, or "Dead Springs," indicating the victory of the sands over the fecundating waters of the oases. In the everlasting struggle between the elements, incessantly modifying the surface of the earth, the wilderness has continued to steadily encroach on the arable land., and in many districts depressions formerly flooded are now destitute of all visible moisture. The local fauna itself shows that the climate has

become drier, and the gradual desiccation of the land is attested by the remains of organisms unable to survive under the changed conditions of their environment.

Nevertheless the local populations, accepting the struggle against nature, have constantly endeavoured to preserve their plantations, and "artesian" wells were sunk in North Africa long before the practice was introduced in Europe. But none of these wells "lived" long, some "dying" in five years, while a few prolonged their existence, under favourable conditions, for eighty or even a hundred years. Since 1856, however, scientific methods have replaced the rude processes of the inhabitants everywhere except in the regions still subject to the influence of the marabuts of Temacin. At a depth of 100 feet the engineer, Jus, reached the Bahr Tahtani, or "Lower Sea," which flows beneath the dried-up bed of the Wed Righ, and the inhabitants of the Tamerna oasis, north of Tugurt, beheld with surprise and delight a spring suddenly welling up and yielding over thirty gallons per second. This source received from the marabuts the name of "Well of Peace," to commemorate the treaty of friendship henceforth cemented between the Saharians and the French creators of living waters.

Fig. 76.—Barrage of the Hamis.
Scale 1 : 85,300.

Since this first essay, over a hundred Artesian wells have been sunk in the hydrological basin of the Melghigh, and fresh sources are being constantly developed. One of the most copious is that of the Sidi Amran oasis, in the Wed Righ, north of Tugurt, which yields nearly fifty gallons per second. The wells have an average depth of 230 feet, with a temperature varying from 65° to 78° F. Sudden changes and even a total

stoppage of the supplies sometimes occur, as in the Hodna district, in 1862, when an underground shock suppressed two wells and reduced the volume of a third by one-half.

Thanks to this increase of irrigating waters, the oases have been largely extended, and M. Rolland alone has planted as many as forty thousand palms in reclaimed districts. Other fruit trees have been doubled; the crops have increased in proportion, and new plants have been introduced in the gardens. New villages have sprung up amid the palm groves; the population of the Ruaras has been doubled, and the tents of many nomad tribes have been converted into fixed habitations grouped round about some newly created oasis. The same process may also be applied in many places to the development of thermal and mineral springs, thus increasing the already abundant supply of medicinal waters in Algeria. It might even be possible to utilise the subterranean sources for pisciculture, the wells of Urlana, Mazer, and Sidi Amran having revealed the presence of several varieties of fishes, crustaceans, and freshwater molluscs.

Efforts are also being made to prevent the waste of the surface waters, which are lost by evaporation or infiltration in the sands and crevices of the rocks. So early as the year 1851, a first barrage was constructed in the gorges of the Meurad, above Marengo in the west Mitija plain. Since then large dykes have been raised in the Macta basin, and for many years an extensive barrage has been in progress, which is intended to intercept the waters of the Wed Hamiz south-east of Algiers. Similar works are being erected in the Shalif basin or its affluents, as well as on other rivers of Algeria. On the completion of the schemes already projected, all the streams rising in the uplands will be arrested at their entrance on the plains by means of dams diverting the current to lateral channels. But these works, some of which are stupendous monuments of human enterprise, are not unattended with danger. The two great reservoirs of the Sig and the Habra have already burst through their barriers, the tumultuous waters overflowing on the surrounding plains, wasting the cultivated tracts and sweeping away houses and villages. But the havoc caused by these disasters is partly compensated by the fresh supply of alluvial matter thus spread over the exhausted soil.

## Climate of Algeria.

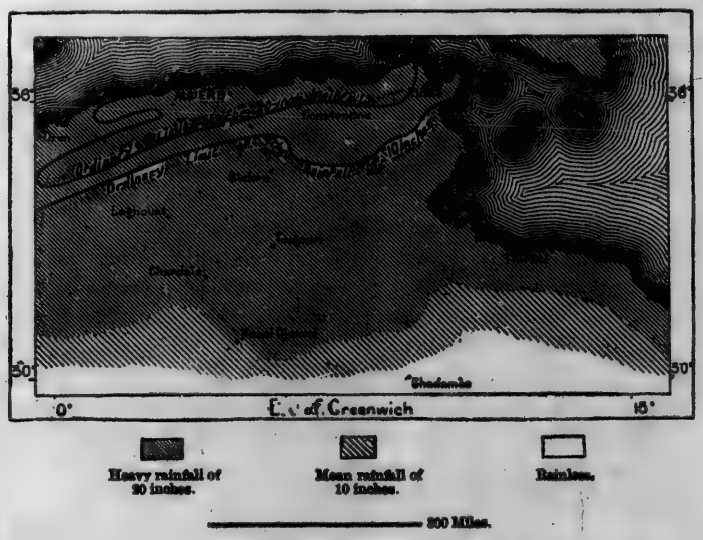
The differences of climate correspond to those of the relief, aspect, and latitude of the land. Each of the several zones—maritime strip, coast range, central plateau, southern slope, and desert—has its special climate, variously modifying the shifting curves of temperature, moisture, and other meteorological phenomena.

Algiers, lying about the middle of the north coast over against Provence, may be taken as typical of the maritime region. On the whole, its climate may be described as mild and temperate, although very variable, owing to the sudden changes of the atmospheric currents. According to M. Bulard's observations, its mean temperature is about 65° F., falling in January to 54°, and in August, the

hottest month, rising to 78°, thus showing an extreme deviation of not more than 24°.

The usual division of the year into four seasons is scarcely applicable to Algeria, which has really not more than two well-defined periods—moist and temperate from September to the end of May, hot and dry for the remaining three months of the year. The position of Algeria on a coast completely exposed to the sea breezes gives to the anemometric *régime* a paramount influence in the distribution of heat, moisture, and atmospheric pressure. Here the winds have free play from all quarters, even from the interior, where the Sahel uplands retard their progress without perceptibly modifying their direction. The sirocco, or hot wind from the south, is tempered by the vicinity of the sea, while

Fig. 77.—Rainfall of the Sahara in 1884.
Scale 1 : 15,000,000.




the cold breezes from the north acquire a certain degree of heat during their passage across the Mediterranean. Algeria lies beyond the zone of regular trade winds; but during the fine season light and pleasant land and sea breezes succeed each other regularly along the coast, the former prevailing at night, the latter during the day.

Elsewhere, owing to the radiation, the changes of temperature from night to day are very considerable, the thermometer under the solar rays rising in some places to 166° F., and falling in the hottest nights to 68° or 69° F., a discrepancy of 98° within the twenty-four hours. The result is a great condensation of aqueous vapour, with abundant dews and frequent fogs during the night and early morning, especially along the maritime districts. The rainfall itself is more

copious than is commonly supposed, the winds from every quarter being charged with some degree of moisture. But the heaviest downpours and most violent storms are brought by the north-west currents, which form a continuation of the fierce Provençal mistral. On the east coast the annual rainfall varies from 24 to 60 inches, while the average, as recorded by the observatory of Algiers for the years 1862—73, was found to be about 37 inches, a proportion much higher than the mean for the whole of France. But for the whole of the hill region north of the Sahara it would appear to be not more than 22 inches.

On the central plateaux, which for vast spaces present no obstacle to the free play of the atmospheric currents, and where the geological structure of the soil is everywhere the same, a great uniformity of climate prevails, although the oscillations of temperature between winter and summer are much greater than on the coast. In winter the cold is very severe, and vast spaces are often covered with snow, which in the depressions lies to a depth of many feet. But the summer heats, although also very intense, are more endurable, owing to the dryness of the atmosphere. Even in the Sahara, the solar radiation causes a fall of the temperature during the night from 150° down to 38° F. Here also dews are abundant, but rain extremely rare, several years sometimes passing without a single shower, at least according to the reports of the natives. But their statements can now be rectified by the observations of meteorologists, who have recorded a mean rainfall of over 3 inches at Biskra during the period from 1878 to 1883, and six times that quantity in the exceptional year 1884.

## Flora of Algeria.

Although differing little from that of Western Tunis between Cape Bona and the frontier, the Algerian flora presents more sharply defined divisions in its several provinces, divisions due to the obstacles presented by mountain ranges and plateaux to the diffusion of plants. The greatest variety of species is found in the maritime zone and on the northern slopes of the coast ranges. Notwithstanding the destructive action of fires and a reckless system of exploitation, veritable forests still exist in this more favoured region. In the low-lying tracts and along the riverain districts, poplar, ash, and aspen trees are matted together in dense thickets by a network of creepers, while on the slopes the prevailing species are the Halep pine, juniper, and other conifers. The suber, zeen (*quercus Mirbeckii*) and other varieties of the oak also cover extensive spaces, especially on the eastern seaboard. The crests of the hills are often crowned with cedars differing little from those of Lebanon, but approaching still nearer to the Cyprus variety. On the moist and wooded slopes of Tlemcen the botanist Kremer has discovered a species of poplar (*populus Euphratica*) found elsewhere only in Morocco and on the banks of the Jordan and Euphrates. A variety of the oak also (*quercus castaneofolia*) hitherto met only in Caucasia, is found spread over the Babor heights between La Calle and Bougie; while other species, such as the Australian eucalyptus, have been more recently introduced by man from distant regions.

But most of the Algerian forests, already wasted in the time of the Romans, and again destroyed by the charcoal-burners, have been replaced by extensive tracts of brushwood and of smaller arborescents, such as the myrtle, arbutus, and bu-nafa, or *thapsia garganica*, formerly so famous in Cyrenaica under the name of silphium, and still highly prized in Algeria.

Above the maritime region and beyond the coast ranges, the changes in the character of the vegetation are due less to altitude than to the aspect of the land, and the proportion of moisture contained in the atmosphere. The olive, the characteristic tree of the seaboard and of the slopes facing the Mediterranean, scarcely reaches the upland plateaux, although it is still met on the Jebel Aures and in the oases at their foot. The cork-tree and Halep pine disappear at the same altitude as the olive, and no evergreen oaks are seen at a higher elevation

Fig. 78.—Forests of Algeria.

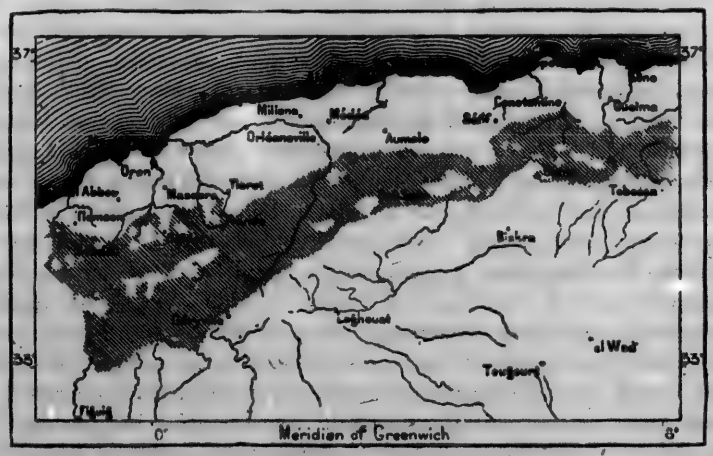
Scale 1 : 9,500,000.

than 5,000 feet. In the Jurjura cedar forests flouriah at between 3,300 and 4,000 feet, and this plant attains a higher altitude than any other species. The only tree that has adapted itself to the breezy and dry climate of the central plateaux, with their great extremes of temperature, is the betum (*pistacia atlantica*), which at a distance looks like an oak-tree. Here are also met a few tamarisks and arborescent species growing in the hollows, but no other trees or shrubs except those planted by the colonists round about the civil and military stations. The characteristic vegetation of the plateaux are coarse grasses, especially of the stipa family, which cover a space of about ten million acres altogether. Conspicuous amongst them are the well-known alfa, or rather halfa (*stipa tenacissima*), and the shi (*artemisia herba alba*), which occupies extensive tracts between the Marocco and the Nile deserts, and the dried leaf of which is used as a substitute for tobacco by the Arabs.

On the upland eastern plateaux, and especially in the districts frequented by the Mememsha and Haracta tribes, the prevailing plant is the guethaf (*atriplex halimus*), which supplies an excellent fodder for the camel. A common species on the plateaux is also the dis (*ampelodesmus tenax*), which resembles the halfa grass, and which is used by the Arabs for thatching their huts and for making cordage. The terfas, or white truffle (*tuber niveum*), is widely diffused throughout the Oran uplands and in the Hodna districts. Together with the *parmelia esculenta*, a species of edible lichen known as "manna," it serves as a staple of food amongst the natives.

Nor is the Sahara itself so destitute of vegetation as is commonly supposed. Besides the palms and undergrowth of the oases, such as fruit-trees, herbs, and

Fig. 79.—The Alfa Region.
Scale 1 : 9,600,000.




Alfa.

120 Miles.

vegetables, hundreds of plants grow on the clayey, rocky, sandy, and marshy tracts of the desert. But there is an absence of European species, and the chief affinities are with the flora of Egypt, Palestine, Arabia, and Southern Persia. Altogether the Saharian flora comprises 560 species, of which about a hundred are indigenous. But the number might be easily increased, and several useful varieties have already been introduced by Europeans in districts where water is available. The sands themselves might be clothed with vegetation, and several species growing spontaneously on the dunes, help to bind the shifting masses and convert them into solid hills. Amongst them is the drin (*arthratherum pungens*), the grain of which in times of scarcity serves as a substitute for barley.

## Fauna of Algeria.

The Algerian fauna, like its flora, forms part of the Mediterranean zone, thus still attesting the former connection of Mauritania with Europe. Nearly all the species are, or at least were at one time, common to the two regions now separated by the Strait of Gibraltar. But as we advance southwards the analogy gradually disappears, first for mammals, and then for birds. In the southern districts a continually increasing resemblance is observed, on the other hand, between the Algerian species and those of Nubia, Abyssinia, and Senaar. The intervening desert was certainly in former times less extensive and more fertile than at present, so that many animals may have migrated from Central Africa to Mauritania. But for shells, which move more slowly and with greater difficulty across unfavourable tracts, the normal distribution has been maintained. Hence the contrast in this respect between the Algerian and Sudanese faunas is complete.

According to Bourguignat, six parallel faunas follow successively from north to south, in Algeria—those of the seaboard, of the coast ranges, of the central plateaux, of the southern ranges, of a now-dried-up maritime zone, and lastly, of the Sahara. Since the separation of the European and North African areas, both have become modified, less, however, by the development of new varieties than through the disappearance of old forms. The loss has been greatest in Europe, where civilisation was earlier diffused; but Mauritania also has lost some of its species even within the historic period. There can be no doubt that the elephant was captured in the Numidian forests two thousand years ago; but it has now disappeared, together with the bear, which from numerous local traditions and legends appears to have survived in the wooded heights of the Upper Seybouse down to the period of the conquest. Shaw speaks of the bear as still living in the Algerian forests; Horace Vernet saw a freshly dressed bearskin; and hunters are mentioned who are said to have recently pursued this animal. The deer is also disappearing, while the ape family is represented only by a single species, the *pithecus innuus*, found also on the rock of Gibraltar.

On the other hand, many wild beasts long extinct in Europe still hold their ground in North Africa. Such are the lion, panther, wild boar, hyæna, jackal, and Barbary wild cat, the two first being numerous especially in the dense thickets of the province of Constantine, and in the hilly and wooded districts south of the Shelif river, near the Tunisian frontier. But the ostrich, bustard, and mouflon, till recently abundant on the central plateaux, have everywhere become very rare since the French conquest. The gazelle, of which there are three varieties, is also retiring towards the Sahara, although occasionally compelled by want of water to return to the southern highlands.

But although the upland plateaux have thus ceased to be a great hunting-ground, the local feudal families still keep their falcons as of old, and also preserve a famous breed of greyhounds, which are highly esteemed, while other dogs have remained in a semi-savage state, prowling about the camping-grounds and justly

feared by the traveller. But of all the companions of the Algerian hunter, none are held in such estimation as the horse, a breed distinguished by its beauty, elegance, high spirit, combined with great gentleness, sobriety, and endurance under fatigue and changes of temperature.

In the Algerian Sahara several reptiles occur of the same species as those of Nubia and Upper Egypt. Such are the horned viper, and the large waran, or Egyptian monitor, some of which are over 3 feet long and look like small crocodiles. They are much feared on account of the magic power attributed to them, and like the chameleon, they are supposed to be the deadly enemies of the horned viper. Another remarkable saurian is the dobb, a lizard frequenting the palm groves, whose delicate flesh is eaten by the natives and its skin used for making pouches and boxes. The crocodile, supposed to have entirely disappeared from Mauritania since the historic period, still survives in the running and stagnant waters of the desert. It was first discovered by Aucapitaine in the Wed Jeddi, and has since been found in the upper affluents of the Igharghar.

Insectivorous birds exist in vast numbers, and to this circumstance must be attributed the comparative rareness of grubs and butterflies. The locust (*oedipoda cruciata*), which was one of the chief causes of the terrible famine of 1867, swarms in myriads only in exceptional years. In ordinary times their numbers are kept down by the stork, "the agriculturists' providence." On the Setif plateaux the curious spectacle has presented itself of thousands of storks drawn up in line of battle and attacking a living wall of locusts.

## Inhabitants of Algeria.

The changes that have taken place since historic times amongst the human population of Algeria, are even still greater than those affecting the animal and vegetable species. But the question at once presents itself, do they, like these forms, constitute a common domain comprising both the northern and southern seaboards of the West Mediterranean? Is the character of unity observed in the organic world throughout this region, retained at least in the fundamental elements of its present inhabitants? Although no positive answer can yet be given, there can be no doubt that numerous migrations have taken place and frequent relations been maintained between the opposite coastlands. At some epoch before the dawn of history, the whole region was certainly occupied by peoples enjoying a common civilisation, whether they were all of one or diverse origin.

Throughout Mauritania, and especially in the province of Constantine towards the Tunisian frontier, megalithic monuments are met with similar to those existing in the West of Europe. Tens of thousands of such remains have already been found, and others are constantly discovered, although they are too often destroyed to procure materials for the house-builder and road-maker. In the Mejana plain, west of Setif, M. Payen estimates at ten thousand the number of menhirs scattered singly or in groups over the steppe. They look like a multitude changed into stone, the mean height of the blocks being that of a man of low stature. The so-

called kbur-el-juhala, or "pagan graves," are mostly of smaller size than the dolmens of like origin still existing in Brittany and La Vendée, from which it has been inferred that the megalithic industry of Algeria was either just beginning or already declining. But the officers engaged in the triangulation of the district between La Calle and Suk-Ahras have discovered sepulchral slabs of enormous size, scarcely inferior to those of Gavr'innis and Lockmariaker in Brittany.

Besides the slabs and raised stones, there occur all sorts of megalithic structures: the cromlech or circle of stones, the cairn, the barrow crowned with a dolmen, terraces encircled by flights of steps, underground chambers hewn in the live rock, cupped stones, sacrificial altars; rows of *hanuts*, or subterranean cells; *kushas*, or tombs in the form of cylindrical ovens topped with a large slab; *basinas*, or mounds composed of concentric layers rising in the form of step pyramids. In the Algerian Sahara large sepulchral urns have been found placed mouth to mouth, the head and body occupying one, the legs the other.

The remains of resinous wood associated with earthenware, and still more the worked flints scattered here and there, not only on the heights skirting the Wed Righ, but even on the hamâdas and in the desert between Tugurt and Ghadames, are amongst the facts regarded by geologists as undoubted indications of recent changes in the climate of Africa. Near Hammam-el-Meskhutin, the Roknia graves, belonging partly to the bronze age, contain thousands of molluscs disposed in horizontal layers. According to Bourguignat, many species then living in the country have ceased to exist, or have become very rare; one species even became gradually modified during the period of the Roknia tombs. Since that epoch of worked flints and polished hatchets, used by peoples living in a more humid climate, the megalithic industry has been continued throughout the historic period down to recent times. In many burial-places the rude stone implements of the natives have been found associated with Roman stelæ, shafts of columns, slabs covered with Libyan or bilingual inscriptions.

Under the kbur-el-juhalas and kushas, numerous skeletons have been found, nearly always resting on the left side and with the knees bent up to the breast. The mode of interment is always the same, whatever be the objects deposited with the dead—coarse earthenware, flint instruments, silver, copper, bronze, or iron rings and armlets. Not many skulls have been collected; but those already measured suffice to show that at this prehistoric epoch, before the arrival of Romans, Vandals, Byzantines, or Arabs, there existed amongst those now collectively grouped as aborigines two perfectly distinct cranial types. Both were dolichocephalic, or long-headed; but one was a tall, the other a short race, the former being further distinguished by the posterior position of the crown and of the diameter of greatest breadth, as well as by more prominent zygomatic arches, nasal apophyses, and frontal ridges. The same cranial conformation still characterises most of the Biskri and of the nomads surrounding the oases. These men also differ from their neighbours in the structure of the skeleton, which when leaning against a wall prevents them from applying the outstretched arms close to the surface, a considerable space being always left behind the humerus.

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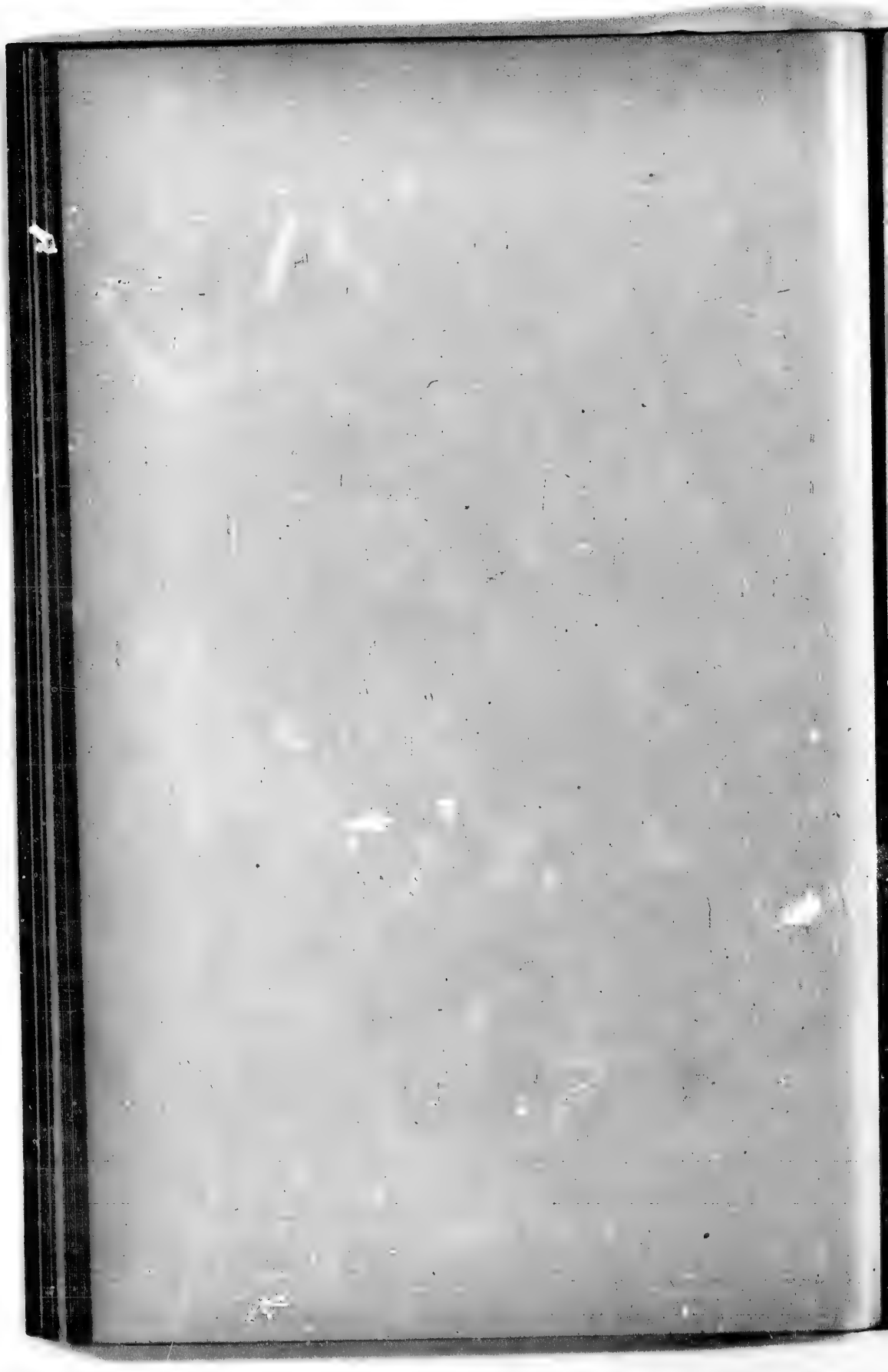
ARAB MENDICANT, BISKRA NEGRESS, AND EL-KANTARA WOMAN.



The second type found in the old graves resembles that of the present inhabitants of the oases. These have a well-balanced cranium, straight features, and arms disposed like those of Europeans; but they are otherwise very slim, and of low stature. People of the same type are found in the more elevated parts of the Jurjura range, where they would seem to have taken refuge, together with the monkey tribes, that have also retired from the plains to these inaccessible uplands.

During the first years of the French occupation, all the natives were confounded under the common designation of Arabs; nor is the distinction between Arabs and Berbers even now always observed. On the other hand, those who clearly recognise the great contrast between the two races, might easily fall into the opposite error of regarding all the non-Arab elements as forming a single ethnical group usually known by the name of Berbers. But these also present different types, and a closer inspection soon shows that many peoples of diverse origin have contributed to form the so-called Berber population. Besides the contrast presented by groups differing in stature, disposition of the limbs, and cranial formation, there is also that of the complexion and colour of the hair. Although the prevailing colour is brown, in all the tribes men are found with light hair, and some even with blue eyes. This fair element, first described by Shaw, is numerously represented in the Aures district, and especially near Khenshela and in the Jebel Sheshar. According to Faidherbe, it constitutes about a tenth of the whole population in the province of Constantine.

The Denhajas, who occupy a tributary valley of the Safsaf south-east of Philippeville, claim to be sprung of fair ancestors, although from subsequent crossings with their neighbours most of them have acquired dark hair and eyes. They call themselves Ulad-el-Juhala, "Sons of Pagans," and until recently they still raised on their graves huge blocks (*suob*), round which religious rites were celebrated. This circumstance lends some support to the hypothesis attributing the Algerian megalithic structures to a fair race, which came from the north through the Iberian peninsula and across the Strait of Gibraltar. But this race has also been identified with the Gaulish descendants of the mercenaries charged by the Romans with the defence of the southern frontiers, as well as with the Vandals driven by Belisarius to the Aures highlands in the year 533.

Even the Romans themselves do not appear to be entirely extinct. The remains of their towns and military stations are met by the hundred; many thousands of their inscriptions have been collected, and on the plateaux of Constantine they seem to be still more present in their works than the French colonists themselves. Here their ruined cities are more numerous and far more extensive than the European towns of recent foundation. Even in this direction they had occupied all the highlands of Aurasius, and penetrated beyond them far into the desert. South of the province of Algiers, their monuments are also met on the verge of the Sahara; and farther west they had built many cities, at least on the Mediterranean slope of the Tell. Their colonists, settled mostly on the upland plateaux of Numidia and the Mauritanian Sitifis, that is, in the regions where the climate was most suited for the preservation of their race, must certainly have left

descendants in Algeria. The Roman type is even said to be well preserved amongst the Ulad-el-Asker, or "Sons of Soldiers," in eastern Kabylia. Although good Mussulmans, the inhabitants of Tebessa still call themselves "Romans;" nor in their mouths is the term "Rumi" confused with that of "Christian," as amongst the other Mohammedans of Algeria. Roman coins were still current in Algiers when that town was taken by the French in 1842. Of the ten sections of the Amamra tribe, in the northern districts of Aures, two are supposed to be of Roman and three of Shawïa (Berber) descent, while the others were formed under marabut influences since the Mussulman invasion.

But whatever proportion of the indigenous population may be of Roman or European origin, the local traditions, as well as certain historic evidences, point to the East as the home of most of the immigrants. From Asia came the ancient Libou (Libyans), who gave their name to the whole continent, and who have been identified with the Luâta, or Liuâta, one of the powerful tribes of Barbary at the

Fig. 80.—Chief Ancient Cities of Algeria.

Scale 1: 10,000,000.

time of the Arab conquest. After reducing the peoples of Mauritania and driving the aborigines from the plains to the upland valleys, the Mohammedan invaders continued to follow the general westward movement of migration. At the same time the changes of soil and climate, combined with the shiftings of population caused by these events, naturally tended to modify the habits of the peoples, in one place softening, in another accentuating their mutual contrasts. At their first arrival the Berber intruders can have differed little from their Arab successors. But while wars, invasions, and marauding expeditions fostered a nomad existence, defeat and the imposition of regular tribute compelled many wandering communities to adopt a settled life. Thus their daily pursuits are not always a certain proof of their ethnical affinities. Many ages before the Arab invasion the Numidians, from whom the present so-called "Berber" population is partly descended, were themselves "nomads," as is probably indicated by their very

name. Nevertheless racial differences are still at least roughly indicated by the occupations of the inhabitants, the nomad pastors being mostly Arabs, while the term Berber is usually applied in a collective sense to the settled peasantry.

This old ethnical appellation of Berber is still borne in a special manner by one of the Atlas tribes in Marocco. But as applied to an aggregate of peoples, whose diverse origins have been sought in Mauritania, West Europe, and the Asiatic regions bordering on Egypt, it has lost all definite meaning, except in a linguistic sense. It now indicates in a general way all those peoples which speak, or which, during the historic period, are known to have spoken, languages belonging to the Libyan family. This form of speech, already current amongst the Tamahu figured on the Egyptian paintings, has been preserved under its old name for thousands of years. Amongst the Tuaregs and the various Sahara peoples, it is still called Tamahâg, Tamahug, or Tamashek, and dialects akin to the Targui are spoken by a large number of other communities from the western oases of Egypt to the Atlantic seaboard.

The Berber linguistic family shows some affinity with the Semitic, not in its vocabulary so much as in its guttural sounds, its grammar, and syntax. Although constituting, with Coptic, the group of so-called Hamitic languages, it presents all the characteristics of an Eastern origin. Relying mainly on these resemblances of speech, certain writers have in fact endeavoured, rightly or wrongly, to establish a common origin for all the indigenous races of North Africa and Western Asia.

But great differences have been observed even among the two chief ethnical groups in Algeria itself. The true Semites represented by the Arabs present the most striking contrast to the various peoples previously settled in the country. The Kabyles of Jurjura, taken as typical Berbers, have a less oval head and face, broader and fuller features, less regular and less retreating forehead, less arched eyebrows than the Arabs. The nose is seldom aquiline and often short and thick, the chin firm, the mouth rather large, the lips strong or thick. The physiognomy usually lacks the delicacy noticed in the Arabs, although the expression is more frank, the eye more animated, the muscular system more compact, the body less pliant, but more robust and more firmly planted on the ground. The Kabyles are also usually of a somewhat lighter complexion, which may be attributed to their more settled existence. On the whole, they differ but little from Southern Europeans, and by a mere change of costume thousands amongst them might be taken for natives of Auvergne or Limoges.

No less marked from the moral standpoint is the contrast between the two elements, although this may be more readily explained by differences of environment and pursuits. Although comprising many essentially nomad tribes, such as the Saharian Tuaregs, the Berbers show a preference for a settled life wherever favoured by the physical conditions. Mostly upland agriculturists, they necessarily differ in habits, social and political institutions, from the restless nomads of the plains. The Kabyles are distinguished by their unflagging industry, enterprising spirit, and common sense. They are inquisitive, fond of discussion, eager for information, susceptible of admiration and wonder, while the Arab affects a passive

indifference to all things. They are little disposed to mystic contemplation, and although superstitious, because ignorant, they give little play to the religious sentiment in their daily pursuits and social relations. Hence they lack the figured speech of the Semite, despising the graces of style, the subtle metaphor, and refined expression of the Arab poets. On the other hand, their life of toil inspires them with a feeling of pride and self-respect, combined with a high sense of individual worth. They demand above all things to be treated with justice, and those whose communal autonomy has been respected by the French, regard and treat each other in all respects as equals.

Although, thanks to their agricultural occupation, the Algerian Berbers have on the whole risen to a higher degree of civilisation than the Arabs, the latter still

Fig. 81.—Chief Tribes of Algeria.

Scale 1 : 9,500,000.

in many respects exercise a preponderating influence over them. As descendants of a conquering race, they still preserve some of the prestige of past triumphs. By them the religion of Islam was also introduced, and to them the Kabyles are indebted for a knowledge of letters and of the Koran. Notwithstanding their nomad existence, the Arabs of the plains enjoy to a larger extent the advantages derived from a greater relative degree of national cohesion. Although more numerous, the Berbers driven to the highlands nowhere form a compact nationality capable of resisting the pressure of the surrounding Arab populations; hence in every part of Algeria Berber tribes are found, which have become assimilated to the Arabs in speech, which have often lost their racial traditions, and which have even gone so far as to concoct false genealogical tables, tracing their descent to some conquering tribe from the Arabian peninsula. Even those that have

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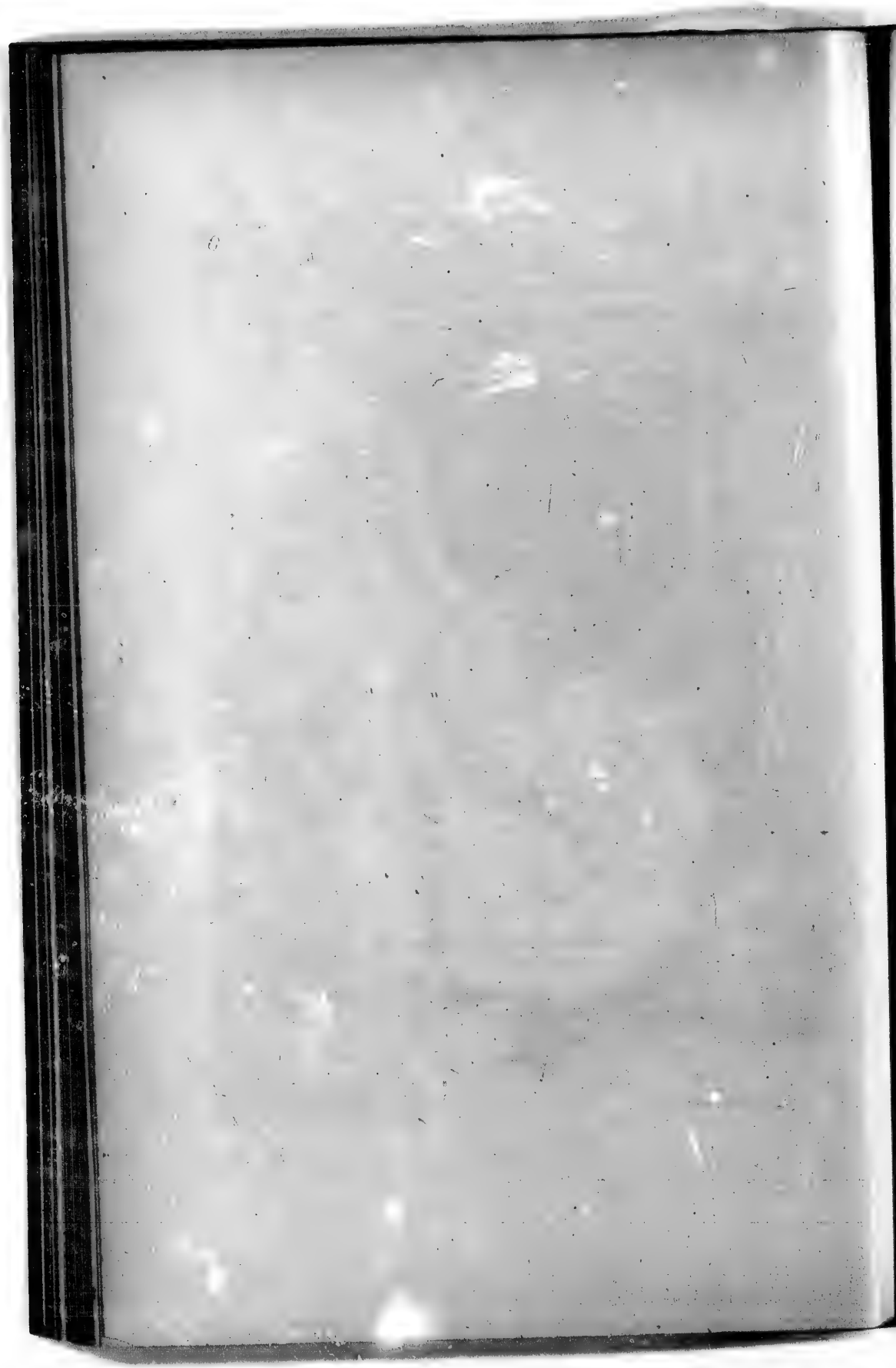
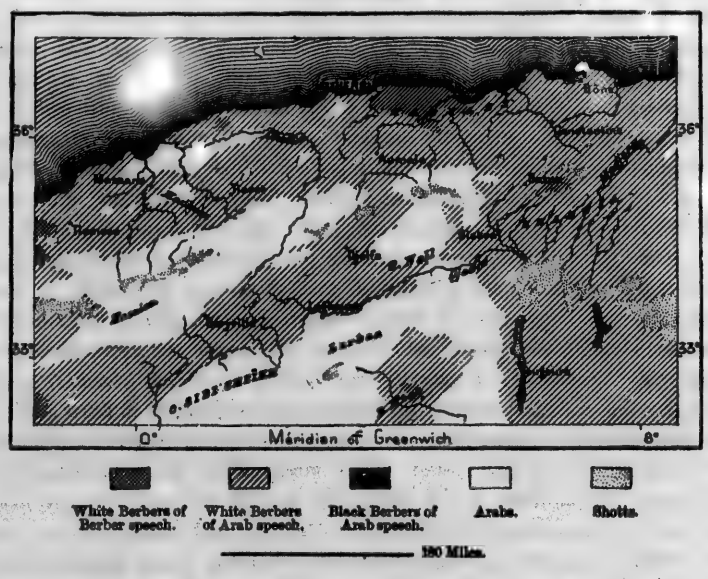


preserved the national idiom, such as the Kabyles of Jurjura, the Shawias of Aures, a few groups of the Dahra district and Marocco frontier, have adopted a large number of Arab words and forms of speech. They have also everywhere abandoned the old Tefinagh orthographic system, inscriptions in which still occur in various parts of Algeria. Hence all instruction is conveyed through Arabic, which is at once the religious, polite, and literary tongue, but which no Berber ever succeeds in pronouncing with perfect accuracy.

The patronymic *Ait* (in South Marocco, *Ida*) is applied exclusively to the Berbers, many of whose tribes have also adopted the Arabic *Beni*, indicating family relationship; while the term *Aulâd*, or more commonly *Ulâd*, *Uled*, is restricted in Algeria almost exclusively to communities of Arab descent. But there is no

FIG. 82.—ARABS AND BERBERS OF ALGERIA.

Scale 1 : 10,000,000.




absolute rule for the use of these terms, and the Ulâd Abdi of Aures are undoubtedly Berbers. Hence great uncertainty prevails regarding the classification of the Algerian races, and while some writers estimate the Berber population at upwards of two millions, of whom nearly nine hundred thousand still speak a Libyan dialect, others, with Pimel, reduce the whole number to no more than a million. The diversities and contrasts caused by language and pursuits, by voluntary or forced displacements, render any general description impossible, so that each lowland or highland group must be studied apart. Of the thousand or eleven hundred tribes enumerated in Algeria, some comprise distinct racial elements; and even amongst the minor groups of Dwars, Dasheras, Arab, or Ferkas, dis-

crepancies may be found within the same Kbaila, or federal league. Many communities are a mere confused aggregate of families of diverse colour and origin, and such heterogeneous groups are found in the suburbs of all the large towns.

### The Algerian Arabs.

The bulk of the Arab tribes are concentrated in the western district, where Mascara may be regarded as their natural capital. Abd-el-Kader, himself a perfect specimen of the Arab type, selected this place as the seat of his empire, and here all the natives of pure Arab descent still live under the tent. According to Faidherbe, the Arab population, including the Moors of the towns, numbers altogether not more than one-fifth, or about six hundred thousand souls. But this estimate would be too low if it comprised all those who possess genealogies tracing their descent from the Prophet's family, or from some noted hero of Islam.

The Algerian Arabs have generally a dull or brown complexion, black hair, scant beard, fine teeth, aquiline nose, broad movable nostrils, black eyes, prominent superciliary arches, high skull, open rounded brow. The legs and neck are disproportionately long, and the chest too narrow, while the women are all comparatively undersized. In public the Arabs are grave, dignified, and impassible; but within the social circle they readily lay aside their assumed air of solemnity, converse and gesticulate with great vehemence. They are indifferent agriculturists, to whom a settled existence is always repugnant, who still love the free life of the steppe, with its boundless horizon, shifting mirage, and ever-changing camping-grounds. To understand and sympathise with them, here they must be seen and studied, for here alone they are happy, hospitable, and genial; here alone they become confidential, and relate with glowing enthusiasm the great deeds of their forefathers. Descendants of warriors who overran all North Africa, from Egypt to Marocco, they naturally despise the degraded races dwelling in fixed abodes, and their ideas regarding property are far from harmonising with the niceties of the code introduced by the new masters of the land. Hence frequent wrangling and strife, aggravated at times by the instinctive hatreds of race. In any case, the Arabs seldom become landed proprietors. The ground, which has no definite limits, belongs in common to the whole tribe; but the social organisation being always feudal, the tribe itself is represented by its chief, who thus becomes the virtual master of the land.

"As soon as there are three of you," says the Prophet, "elect a chief." Religious fanaticism also tends to foster discussion among the Arab tribes, who are much more inclined to mysticism than their Kabyle neighbours. Most of them are sincere believers, obeying the precepts of Mohammed, and muttering in a low voice the passages from the Koran which command the extermination of the Infidel.

Thus it happens that by his manner of thought and sentiments, as well as his habits and traditions, the tribal Arab feels little inclined to adapt himself to the changed conditions developed round about him by the settlement of the land, the

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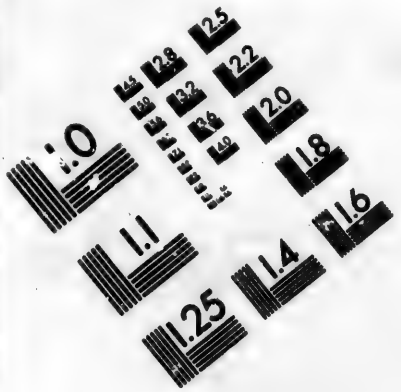


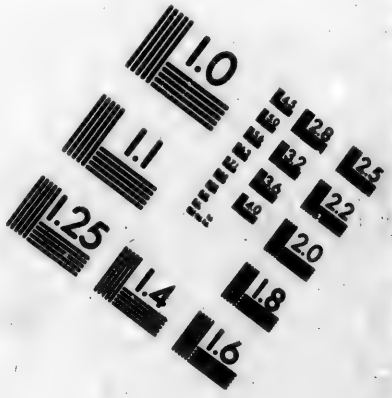


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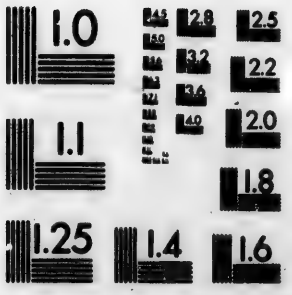


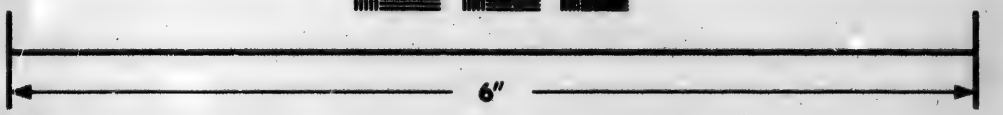


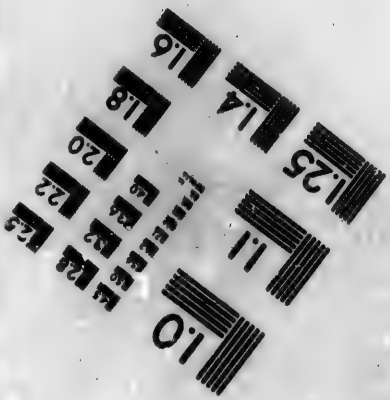

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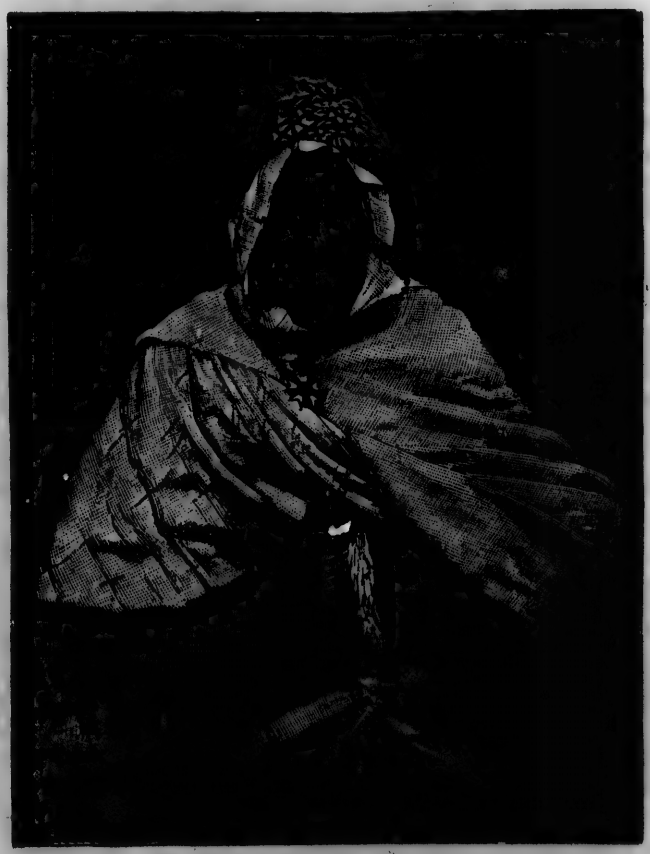
foundation of towns and villages, the construction of roads and railways. He gradually becomes an alien in the land conquered by his forefathers, and in many districts he pines and perishes, making room for men of other races. It may be stated in a general way that the Arabs resist these adverse influences best on the boundless upland plateaux, where but few French civil and military stations have yet been founded. But in the towns and urban districts they tend gradually to

Fig. 83.—Arab Type: Agha of Touggt.



disappear, killed off by vice, misery, lack of confidence in the future, and the exactions of their chiefs.

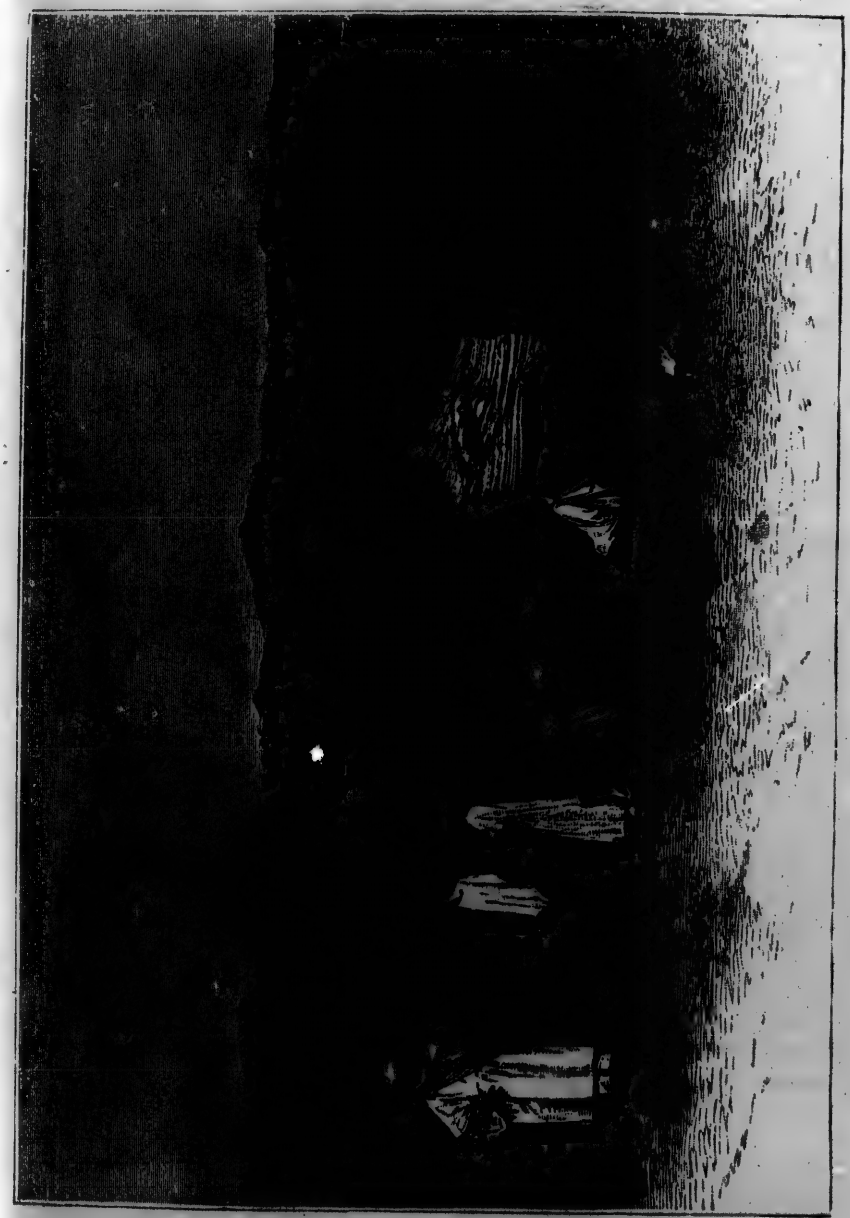
The same fate is overtaking the so-called Moors, or "Hadri," that is, the more civilised Musulmans dwelling in the coast towns, under the very eyes of their foreign masters. But their rapid disappearance may be partly due to the instability of a heterogeneous race comprising the most diverse elements introduced

by former wars, piracy, slavery, polygamy. Thus have been thrown together Berbers, Syrians, Circassians, Albanians, Spaniards, Balearic Islanders, Italians, Provençals, Haussas, Bambaras, Fulahs, and even groups of Gipsies (Gsani, Guezzâni), who arrived contemporaneously with the Andalusian Moors expelled from Spain. The Kulugli (Kur-Ogli), the offspring of Turks and native women, were also formerly very numerous in the coast towns and in certain inland villages; but these half-castes have already been almost entirely absorbed in the general Mussulman population of the towns.

### The Negroes, Jews, and Europeans.

A large strain of Negro blood may everywhere be recognised among the inhabitants of Algeria, and whole tribes even among the highland Kabyles betray clear proofs of crossing between the aborigines of the seaboard and the Sudanese Negroes. Perhaps more than one-half of the Algerians who pass for Arabs or Berbers are of mixed descent; but pure Negroes are now rarely met, owing to the almost complete interruption of direct intercourse across the Sahara between the Mediterranean seaboard and Western Sudan. Hence, since the suppression of the slave trade in 1848, the local Nigritian elements are gradually disappearing, while the children of free immigrants from Sudan seldom survive. The Negroes settled in Algeria are all distinguished by their love of work, finding employment chiefly as agricultural labourers, stone-breakers, watchmen, or domestic servants.

The Jews, far less numerous in Algeria than in Morocco, form nevertheless an important element of the population, owing to their spirit of solidarity, their money-making instincts, and the part they take as French citizens in the political administration of the country. The European immigrants, constituting a seventh part of the whole population, have already become the predominant race in Algeria. Thanks to their higher culture, combined with the exercise of political power, they naturally occupy all the chief civil and military positions, and henceforth control the destinies of the country. The French have resumed the work of the old Roman rulers, but under conditions greatly modified by the progress of events. Except in Western Europe and in Mauritania, where it reached the ocean, the Roman world was hemmed in on all sides by unknown regions and hostile populations; foreign pressure was constantly felt on the frontiers, and the political equilibrium was at last overthrown by the migration of the barbarians. Now the conditions are changed, and the modern European world, instead of being surrounded, everywhere encircles the less cultured populations, incessantly encroaching on their domain, and transforming them by the introduction of new industries and new usages. If they do not become entirely assimilated, they must at least share in the same culture, and especially to the French colonists on the Mediterranean seaboard falls the lot of carrying on this conscious or unconscious work of civilisation throughout the regions of North Africa. The results already achieved since 1830 are considerable; from year to year the face of the land



SAHARAN LANDSCAPE.—NOMAD ENCAMPMENT.

becomes modified by the foundation of new towns, the spread of agriculture, the development of the network of roads and railways. Although the European element is still in the minority, its influence is already everywhere visible from the seaboard to the upland plateaux and the verge of the desert.

## Topography.

The traveller visiting Algeria is surprised at the slight contrast presented by its towns and those of the mother country. But for the palms and bamboos adorning the public gardens, the Moors and Arabs mingling with the crowd on the quays and in the streets, he might find it difficult to believe that he had really crossed the Mediterranean. The quarters built by the French architects seem to have been modelled on those of Marseilles; almost everywhere the picturesque Arab houses are masked by streets with regular and commonplace façades; and the stranger may reside for a long time in a modern Algerian town without having ever to penetrate into those labyrinths of dwellings which recall an already antiquated epoch.

But extensive tracts may still be traversed for hours together without meeting a single human habitation. Such on the eastern plateaux is the district drained by the Mejerda and its affluent the Wed Melleg, and comprising a total area of about 4,000 square miles. Standing at a mean elevation of over 3,500 feet, endowed with a healthy climate and fertile soil, and forming the converging point of the trade routes between the coast and the desert, this at present almost uninhabited region presents one of the most promising fields for future colonisation. Here the remains of Roman settlements are scarcely less numerous than in the neighbouring territory of Tunis, and since their complete reduction about the middle of the century, European immigrants have again begun to find their way to these breezy uplands. They are at present occupied by three distinct tribal groups—the Nememshas in the south, the Ulâd Sidi Yahia-ben-Thaleb in the centre, and in the north the Hanenshas—all of Berber stock, more or less mingled with Arab blood since the invasion of the eleventh century.

The town of *Kalaa-es-Senam*, standing on an isolated table of the plateau, is a stronghold of the Hanenshas, who since their final reduction in 1871, have maintained a peaceful bearing towards the new French settlers. But the most important place in this region is *Tebessa*, the ancient *Teveste*, whose many natural advantages seem to ensure it a brilliant future. Although dating only from the time of Vespasian, its favourable strategic and commercial position soon rendered Teveste a flourishing town of some forty thousand inhabitants. Notwithstanding its destruction by the Vandals and many subsequent vicissitudes, it still preserves some imposing Roman or Byzantine remains, such as the ramparts with thirteen flanking towers, a magnificent triumphal arch, an aqueduct restored by the French, numerous tombs, and a temple of Minerva (?) now converted into a Christian church. The French citadel is entirely built of blocks taken from the old structures, and the routes converging on Tebessa are still the old Roman roads, one of

which, running through Mascula and Diana towards Sitifis, presents the appearance of an "Appian Way" with its temples, porticoes, and other monuments.

North of Tebessa there are no centres of colonisation until we reach the Mejerda basin. In the intervening tract, where the vestiges occur of no less than a hundred and fifty Roman towns or hamlets, the only French stations are the so-called *borj*, constructed at considerable expense along the Tunisian frontier, and rendered nearly useless since the line of military defences has been advanced to Kef, in the territory of the regency. In the upper Melleg valley the chief station on the route between Tebessa and Constantine is the village of *Meskiana*, in a district covered with prehistoric and Roman ruins. Formerly the whole of this

Fig. 84.—Suk-Ahras and its Environs.

Scale 1 : 121,000.

region was covered with olive groves, as is evident from the oil-presses, remains of which occur in every Roman farmstead.

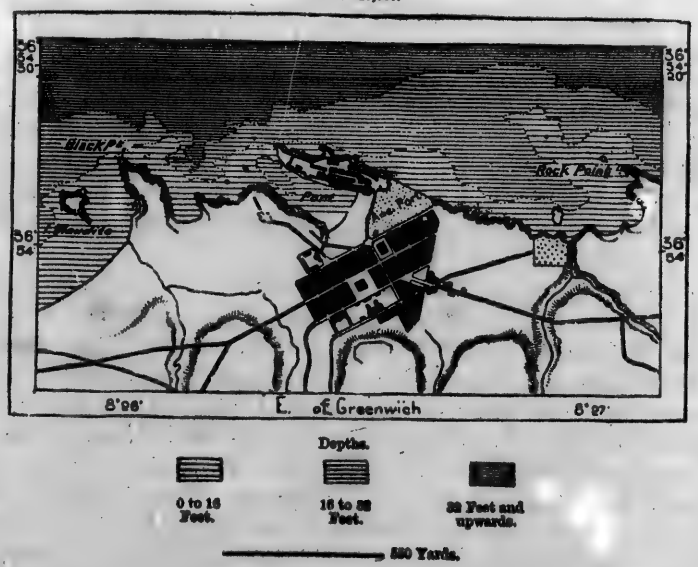
*Suk-Ahras*, the chief place on the frontier plateau, occupies the site of the ancient *Thagaste*, the birthplace of the famous Austin, bishop of Hippo. Until 1852 a mere military station threatened by the powerful Hanensha tribe, Suk-Ahras has since become a flourishing town, as the chief centre of trade and intercourse between the two ports of Bona and Tunis. Here large tracts have already been brought under cultivation, and the slopes of the hills, recently overgrown with scrub, are now under crops or planted with vineyards. Of Roman antiquities

nothing survives except a few inscriptions and shapeless blocks; but the line of railway, here constructed through a series of deep cuttings and the Fej-el-Moktha tunnel, across the hills and down the winding Seybouse Valley, is a remarkable monument of modern engineering skill.

The southern plateaux beyond the gorges of the Mejerda river abound in Roman remains, such as those of *Tagura*, now *Taura*, near Ain-Guettar; *Mdaurush*, the ancient *Madaura*, birthplace of the rhetorician Apulæus; *Tifesh*, the Roman *Tipasa*; and near the sources of the Mejerda, *Khemissa*, identified with *Thubursicum Numidarum*.

The northern slope of the mountains running north of Suk-Ahras to the Khumirian highlands give birth to several copious streams collected in the Mafrag

Fig. 85.—La Calle.
Scale 1 : 20,000.




basin, which, although at present almost uninhabited, seems destined to become one of the most populous districts in Algeria. At present the only town in this region is *La Calle*, which lies beyond the Mafrag basin on a creek flowing to the Mediterranean, and separated from the interior by an amphitheatre of steep hills. This seaport, which is connected by a difficult route with Bona, was long a nest of corsairs; but a hundred and fifty years before the conquest, the rocky headland on which stood the old town had already become French territory. The trading station founded here in 1560 by Marseilles merchants was removed in 1694 to *Mers-el-Kherraz*, which became the port of La Calle, where a small colony, recruited chiefly from the French prisons, held its ground till the close of the eighteenth

century. During the wars of the Empire the English purchased this station from the natives, but restored it to France in 1816. Although the oldest French settlement in Algeria, La Calle is still the least French in its European population, three-fourths of whom are Italians, chiefly from Naples and Sicily. The coral fishery, the chief industry on this coast, has suffered much by the introduction of modern dredging gear, and is now largely replaced by the trade in sardines, large quantities of which are here cured and exported to Naples and the south of Italy. In rough weather the harbour of La Calle is almost inaccessible to shipping; but works have been undertaken or projected which, when carried out, will afford complete shelter from the winds and surf.

Some six miles east of La Calle, the Tunisian frontier is guarded by the fortified station of *Um-et-Tebul*, which occupies the lower slope of a mountain abounding in argentiferous lead deposits, at present worked by about three hundred miners, mostly from Piedmont. From 2,500 to 3,000 tons of ore are yearly forwarded by a small local railway to *Mesida*, and there shipped for Europe. In the district between La Calle and the Tunisian frontier have been found the largest dolmens and the most numerous Latin and Berber bilingual inscriptions.

At the mouth of the extensive Seybouse Valley stands the famous city of Bona, and at the source of the Sherf, its chief headstream, the modern town of *Ain Beida* ("White Spring"), which dates only from the year 1848. North-west of this place, which lies midway between Constantine and Tebessa, is situated the important mart of *Um-el-Buagi*, much frequented by the powerful Haracta Berber tribe.

In the Zenati river valley, usually called Hamdan, forming with the Sherf the main stream of the Seybouse, the chief centre of population is the commune and town of *Wed Zenati*. The whole of this district, including *Ain-er-Regada* and *Ain-el-Abid*, has been conceded to a financial company, and constitutes a vast domain of some 250,000 acres, of which 185,000 are leased to a single tenant.

On the Wed Hamdan, a short distance above its junction with the Sherf, are the houses and railway station of *Hammam-el-Meskhuthin*, or "Bath of the Accursed." At this point the bed of a streamlet is occupied by a "petrified cascade," or mass of calcareous concretions over thirty feet high, formed by a number of tiny falls charged with lime, which have here deposited incrustations in diverse colours—red, violet, blue, or grey, and here and there sparkling like fresh-fallen snow. These copious springs discharge nearly four hundred gallons per second, at a mean temperature of from 220° to 230° F. The concretions, which are of a somewhat coarse texture, are so rapidly precipitated that the position of the cascade is continually advancing, and fresh rills have constantly to be formed for the service of the ponds established along its sides.

The saline and ferruginous thermal waters of Hammam-el-Meskhuthin are utilised by a military and a civil hospital, the latter frequented especially by the Jews, and this station is destined sooner or later to become one of the chief therapeutic establishments in Algeria. It takes its Roman name of *Aquæ Tibilitanæ* from the town of *Tibili* or *Annuna*, whose ruins lie some 6 miles to the

south-west, on the route connecting the villages of *Clausel* and Wed Zenati. The

Fig. 86.—Petrified Cascade of Hajjar-el-Mekhuthin.

neighbouring cliff of Hajar-el-Khenga is covered with curious sculptures, amongst

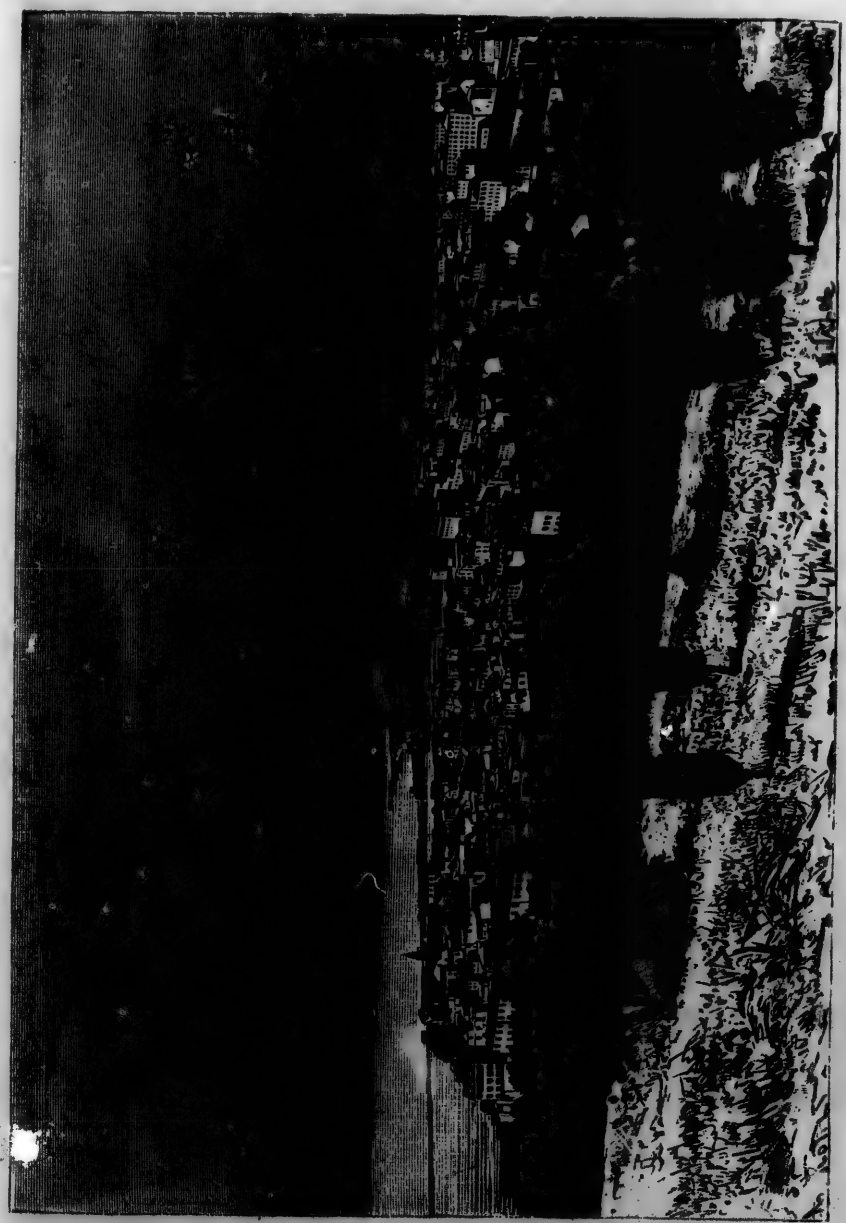
which may be recognised figures of men, dogs, cattle, and an ostrich. Farther north was the site of *Roknia*, in a district strewn with dolmens and other prehistoric monuments, including over three thousand graves, to which the natives apply the term *hanut*, or "shop." From these have been recovered some skeletons of great interest for the study of the various Algerian races.

A hill on the right bank of the Seybouse, below the confluence of the Sherf and Zenati, is occupied by the town of *Guelma*, heir to the name, if not the site, of the Roman *Calama*, where Punic was still spoken in the fifth century. Enclosed by a verdant belt of vineyards and olive groves, Guelma, which stands on the border of the Arab and Berber territories, is one of the pleasantest places in Algeria. Over its valley are dotted the picturesque hamlets of *Ain-Tuta*, *Heliopolis*, *Petit*, and *Millesimo*, and in the neighbourhood are the copious mineral springs of *Hammam-el-Beida*, in a basin surrounded with Roman ruins embowered in foliage.

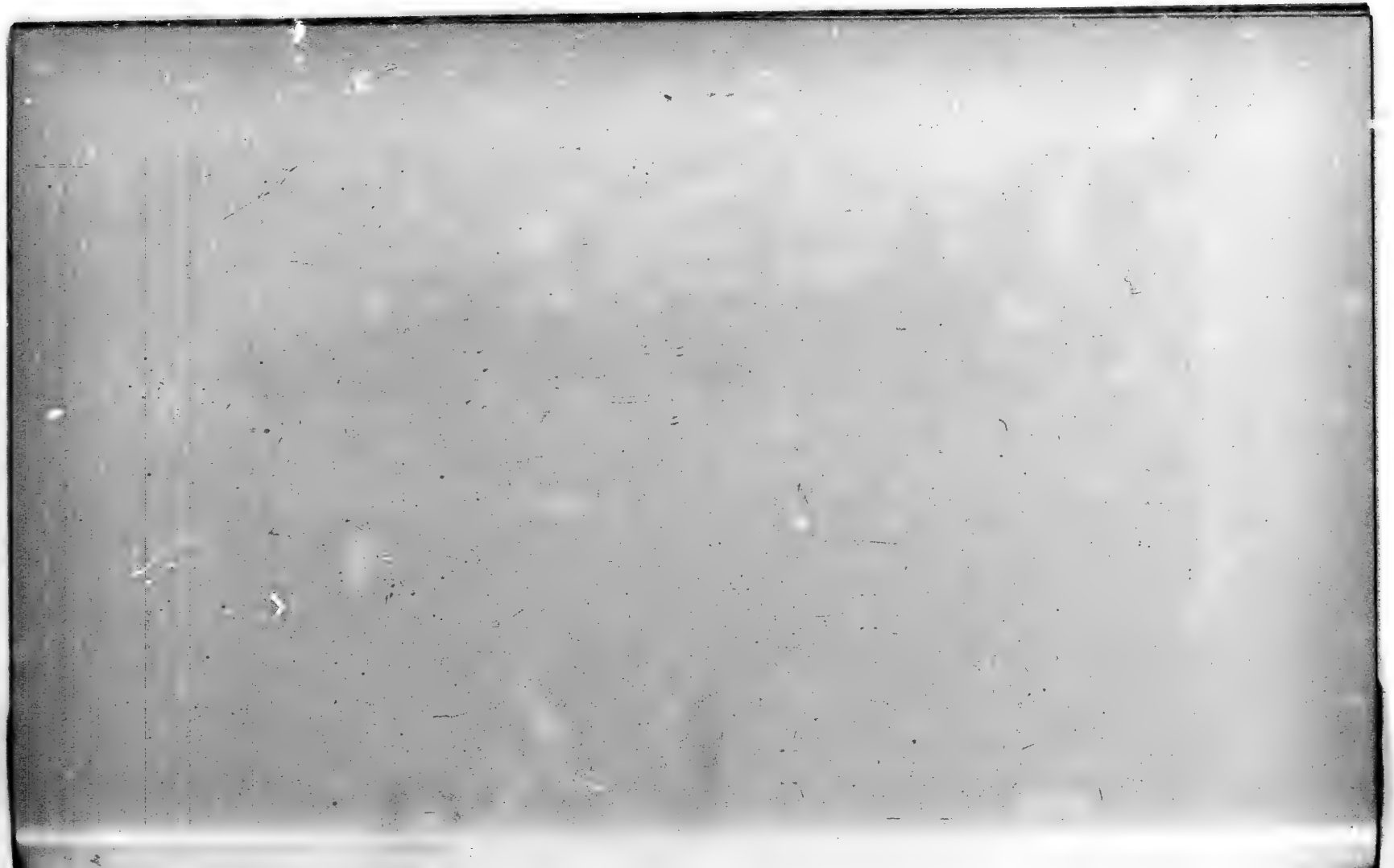
The charming village of *Duvivier* commands the right bank of the Seybouse opposite the junction of the two railways from Algiers and Tunis. Thanks to the facilities of communication and the fertility of the soil, numerous European settlements have sprung up in the Lower Seybouse Valley. Such are *Barral*, *Mondovi*, noted for its tobacco, *Duzerville*, *Wed Besbes*, *Merdès* or *Combes*, *Zeriser*, *Randon*, *Morris*, and *Blandan*, and in the neighbouring Mebuja valley the town of *Penthièvre*.

## Bona—Herbillon.

These stations become more numerous as we approach the city of *Bona*, which, although preserving the name of the Roman *Hippon* (*Hippo*), the *Ubba* of the Carthaginians, does not occupy the actual site of that ancient city. Hippo Regius, where the famous Bishop Augustine resided for thirty-five years, and which was overthrown by the Vandals in 431, the year after his death, stood over a mile from the present town, on a hill commanding a fine prospect of the blue Mediterranean waters and surrounding district. A few ruins of the Glisia Rumi, or "Church of the Romans," are still scattered on the side of the hill, and near its base is the bridge over the Bujema (Bu-Jemâa) still resting on its old foundations. Owing to the constant encroachments of the alluvial plain formed by the Seybouse, the city has had to be rebuilt at some distance north of the ruins of Hippo. The port, which two thousand years ago opened at the foot of the hill, has been gradually shifted to the north; and the shipping, instead of penetrating into the natural harbour at the river's mouth, has to anchor off the coast, under the precarious shelter of the headland on which now stands the kasbah or citadel of Bona. The Arab quarter stood on the slopes of this eminence; but since the French conquest it has spread beyond the enclosures over the low-lying plain which stretches in the direction of the Seybouse. Between the old and new quarters a handsome boulevard runs from the sea to a wooded height, beyond which it is to be continued farther inland. Thanks to its well-kept streets, shady walks, and pleasure-grounds, Bona is one of the most agreeable places in Algeria, and as



GENERAL VIEW OF BONA.



the seat of the Hippo Academy has even become a centre of scientific and literary activity.

As a seaport Bona enjoys great advantages. Its roadstead, well sheltered from the west and north-west winds by Cape Garde, was much frequented during

Fig. 87.—Bona.
Scale 1 : 90,000.

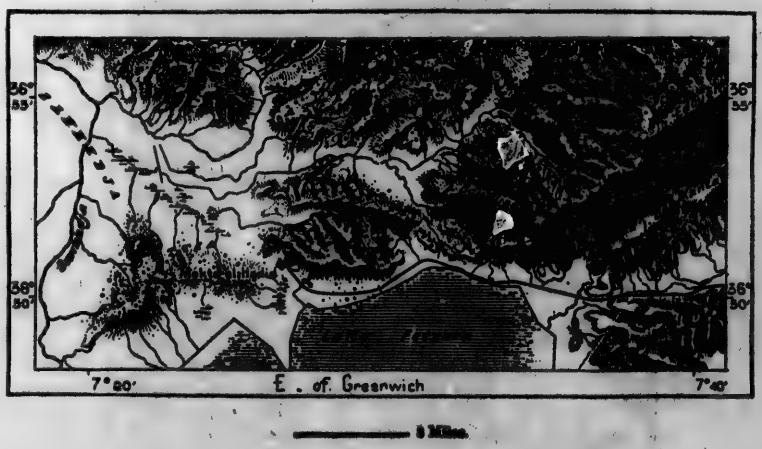
Mediæval times by European mariners, who were protected from oppressive exactions by special conventions. On two occasions, in 1152 and 1535, it even fell into the hands of the Christians, and after its final occupation by the French in

1832, it became one of the chief naval stations on this coast. The present harbour, from 18 to 20 feet deep inshore, occupies an area of about 30 acres; while the outer port, protected from the surf by a pier 2,600 feet long, encloses an additional space of 175 acres. But its growing trade, especially with Algiers, Marseilles, and Tunis, requires further accommodation, and it is now proposed to convert a large portion of the outer harbour into a second basin, lined with quays reclaimed from the sea.

About one-third of the motley population of Bona are French, after whom the most numerous elements are the Italians and Maltese. There are about one thousand Kabyles and Mzabites, employed chiefly as porters and labourers, within the city proper, while several thousand natives reside in the outskirts grouped in the picturesque but squalid village of *Beni-Ramasses*. On the neighbouring Mount Edugh is a pleasant health-resort, whose advantages have hitherto been

Fig. 88.—Edugh and Lake Fetzara.

Scale 1 : 200,000.




somewhat neglected. From the crest of this eminence an extensive view is commanded of the surrounding hills falling northwards in terraces down to the coast, and in the opposite direction down to the depression of Lake Fetzara. On the northern slope, between Capes Garde and De Fer, the only group of habitations is the little fishing village of *Herbillon* (Takush); but the southern is more thickly inhabited, thanks to the iron-mines of *Mokta-el-Hadid*, which yield an excellent ore, almost as highly appreciated as that of Dalecarlia, and containing 62 per cent. of pure metal. Over a thousand workmen are employed in these mines, which yield about four hundred thousand tons annually, valued at £280,000, and exported to France, England, and even the New World. But the rich deposits of copper and zinc found at *Ain-Barbar*, in the very heart of the Edugh district, are no longer worked, owing to the extreme difficulty of cartage.

Less than half a mile south of the Mokta-el-Hadid works, lies the important station of *Ain Mokhra*, which is unfortunately exposed to the exhalations from Lake Fetzara. This lagoon or morass, which has a mean depth of little over 6 feet, is evidently the remains of an old inlet forming a continuation of the present Gulf of Bona across the now-dried-up plains of the Mafreg and Mebuja rivers. The question of its drainage has frequently been discussed, and should this project be carried out, over 30,000 acres of rich alluvial soil will be brought under cultivation. In summer the basin is nearly dry, and it might be easily diverted to the lower Seybouse by reducing the bed of the Mebuja to a lower level than the present level of the lake.

The railway connecting Ain Mokhra with Bona is soon to be continued westwards in the direction of the station of *Saint-Charles*, on the Constantine-Philippeville line. Were it also extended to the coast by skirting the Filfila headland, the works might be resumed in the famous marble mines of this district, interrupted since the time of the Romans.

In the Wed-el-Kebir basin, which flows to the gulf sheltered by Cape de Fer, the only important European town is *Jemmapes*, situated in a rich and well-watered district. The local Berber tribe of the Sanhejas has preserved the name formerly borne by the powerful Zenaga nation. The name of the Zenaga or Senegal River, over 2,000 miles from this place, also attests the former extension of the Berber race dispersed by the Arab invaders.

## Constantine.

*Constantine*, capital of the eastern department, is one of the famous cities of Africa. From the dawn of Mauritanian history this great natural stronghold appears under the name of *Cirta*, that is, the "fortress," as the word is commonly interpreted. The title of Constantine, preserved by the Arabs under the form of *K'santhina*, was conferred on it at the beginning of the fourth century, in honour of the Emperor Constantine. The extensive ruins scattered over the district attest the important position of this ancient capital of Numidia and centre of the Roman dominion in North Africa. But its very strength necessarily exposed it to frequent attack, and according to the local tradition, it was taken no less than eighty times. By its capture in 1837 the French secured a solid footing in the interior of the eastern Tell, and easily crushed all local risings, henceforth deprived of a common rallying-point.

The city proper occupies a gently inclined rocky table, whose northern headland rises to a height of 2,100 feet, or 360 feet higher than the opposite point. The whole terrace forms a somewhat regular trapese, with a circuit of nearly 2 miles, and detached by deep ravines from the rest of the plateau on all sides except towards the south-west. The steep escarpments facing south-east and north-east rise precipitously above the bed of the Rummel, which plunges into these gloomy gorges soon after its confluence with the Bu-Merzug. Of the five bridges formerly connecting the two sides of the abyss, four have almost entirely

disappeared; but the fifth, at the eastern angle of the cliff, has always been rebuilt. The iron arch constructed by the French engineers, at a height of 350 feet above the stream, stands on fragments of masonry of every epoch from the time of Antoninus Pius. Immediately below this bridge the Rummel disappears beneath a rocky arcade, beyond which the cliffs again fall vertically to the bed of the stream, leaving only a solitary pointed arch of remarkably symmetrical shape,

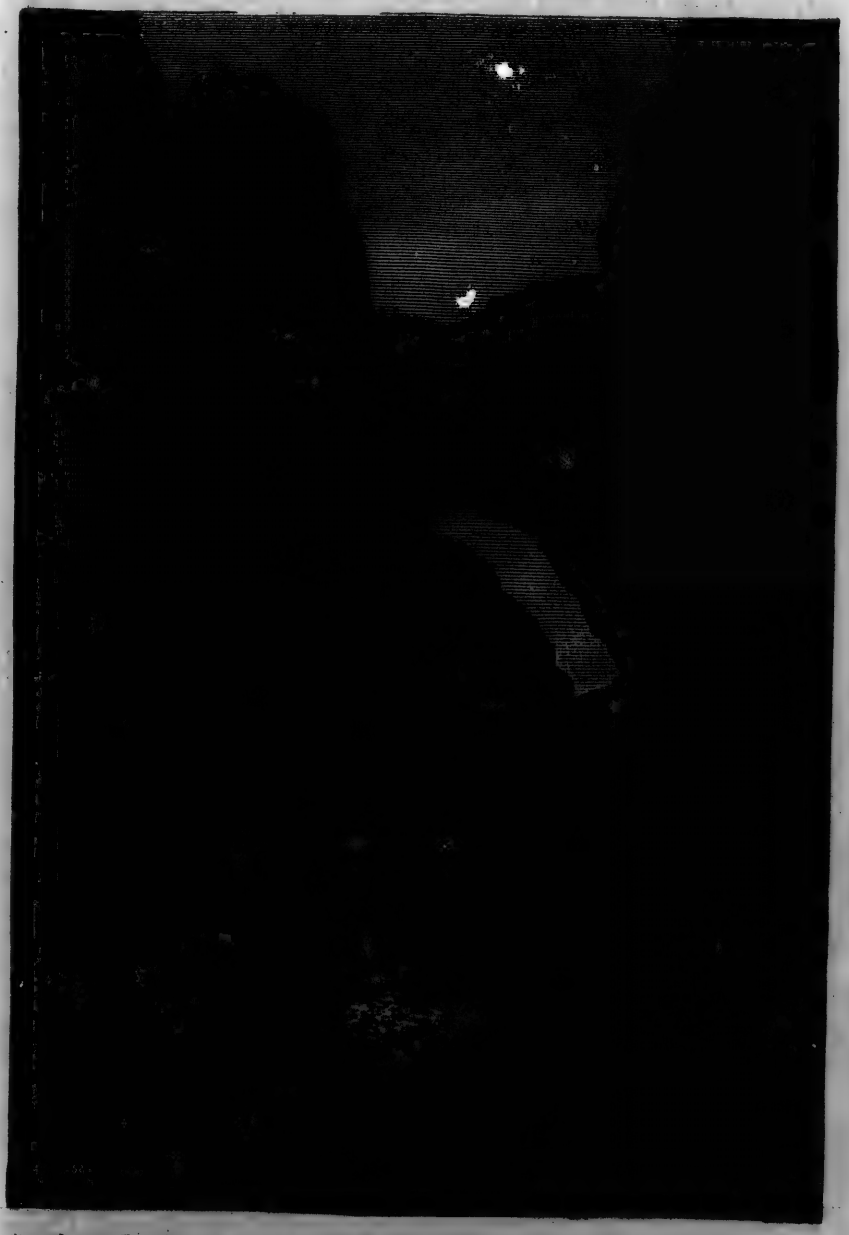
Fig. 89.—Constantine in 1836.

Scale 1 : 10,800.

forming a natural bridge over the chasm. Farther down the current ramifies into three turbulent branches, and at the issue of the gorge plunges in three successive falls into the lower valley. Unfortunately it is impossible to penetrate far into this romantic ravine, owing to the mephitic exhalations rising from the Rummel, which serves as an open sewer to the town.

On the rocky table above the gorge houses and buildings are packed close

Fig. 90.—The Natural Arch of Constantine.



together. In the north are grouped the barracks, hospital, arsenal, and kasbah,

south of which run the regular streets of the European quarter. The Jews are grouped in the east, the Mzabites in the centre, and in the south the Arabs occupy a labyrinth of courts and alleys, into which few Europeans venture without a guide. Whole streets are devoted to the leather trade, which is the staple industry of Constantine, giving constant employment to hundreds of tanners, saddlers, and shoemakers.

Fig. 91.—Constantine in 1884.

Scale 1 : 20,000.

Constantine has scarcely any noteworthy monuments. Few of its ninety-five mosques have escaped the spoiler's hand, and the citadel is a mere aggregate of barracks and magazines, although some valuable inscriptions have been preserved in its outer walls. Nearly ten thousand inscribed stones have here been collected, and the city, which is a provincial capital, also contains numerous other archæological remains, such as Roman statues, busts, vases, sepulchral and votive

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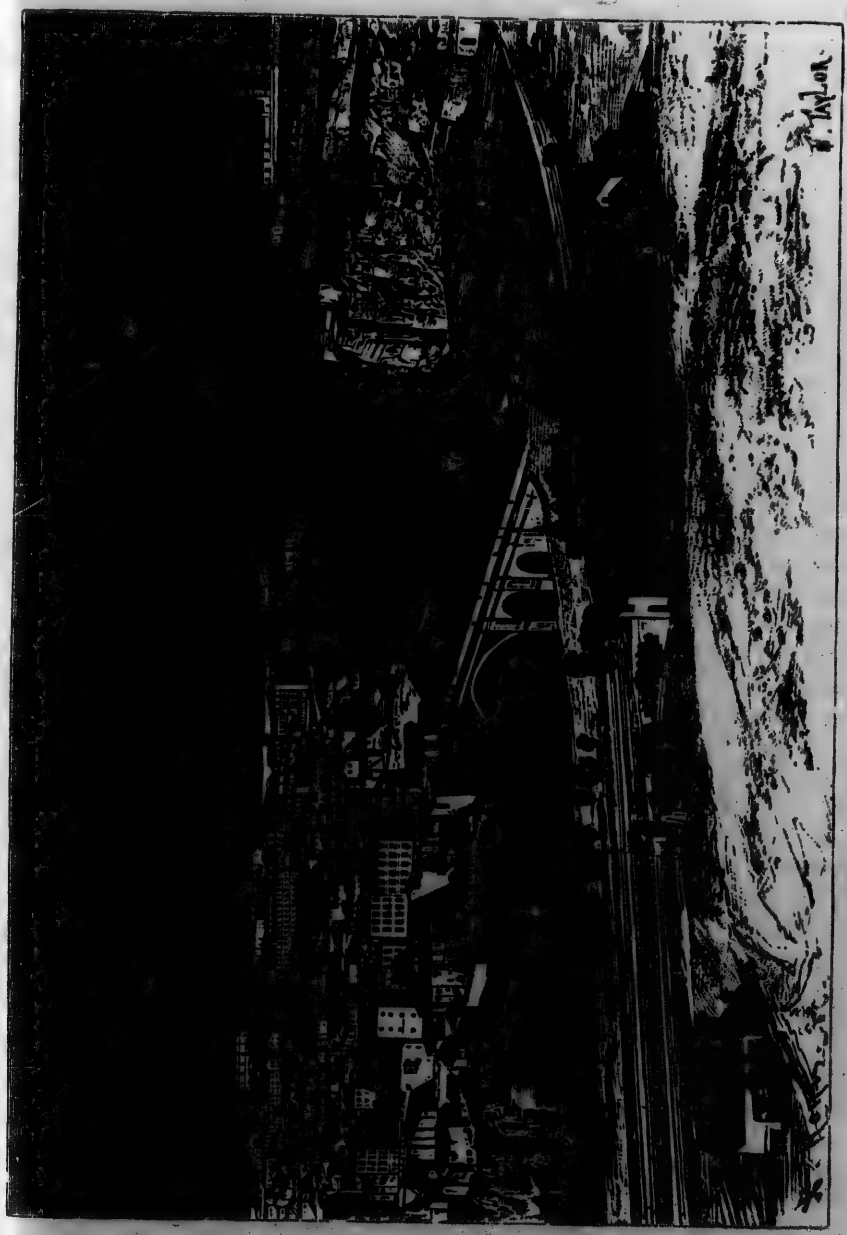


GENERAL VIEW OF CONSTANTINE—TAKEN FROM THE KASBOUBA ROUTE.

tablets. The most interesting building is the Moorish palace of the last Bey, Ahmed, now occupied by the French staff. Near this structure are grouped the new municipal buildings, the Geographical Society, and the other learned institutes established since the French occupation. In order to make room for the continual growth of the city, it is proposed to level the Cudiat-Ati hill, the site of the old necropolis at the south-west corner, and lay out the space thus acquired beyond the walls as a new quarter.

Amongst the extensive remains scattered over the lower valley of the Rummel are the ruins of the fortified town of *Tiddi*, near which the right bank of the Smendu, a tributary of the same river, is occupied by the tomb of the Lollius family, one of the finest Roman monuments in Algeria. The Alsatian colonists settled in the surrounding villages of *Ruffash*, *Ain-Kerma*, *Belfort*, *Altkirch*, and others, have in several places been allowed to utilise these remains for the construction of their dwellings.

The rapidly increasing local and export trade of Constantine is furthered by several railways, all of which, however, have not stations in the city itself. Thus the junction of the Guelma-Tunis line is at *Khrub* (*Khorub*), the largest cattle market in East Algeria, while the two lines between Setif and the Sahara branch off at *El-Guerra*. East of this point the Algiers line approaches the Upper Rummel Valley, where are several centres of European colonisation, such as *Ain-Smara*, *Wed Atmenia*, *Châteaudun*, *Coulmiers*, *Saint-Donat* (a curious corruption of Sidduna), *Paladines*, and *Saint-Arnaud*. Here the *Abd-en-Nur* nomads have mostly acquired sedentary habits, and their habitations are now everywhere intermingled with those of the European settlers. Since the middle of the century these Berber communities have ceased to speak their native tongue; and many of them are noted for their light hair and blue eyes.

The railway connecting Constantine with the coast winds along the slopes of the El-Kantur hills down to the plains of the Safsaf, which, till the French occupation, were almost uninhabited. Near the line follow in succession the villages of *Bizot* and *Condé-Smendu*, and the little town of *El-Harrush*, surrounded by gardens and olive groves watered by the Safsaf. The neighbouring hamlets of *Saint-Charles*, *Saint-Antoine*, *Damrémont*, and *Valée*, have all become flourishing centres of viniculture.

## Philippeville—Jijili—Setif.

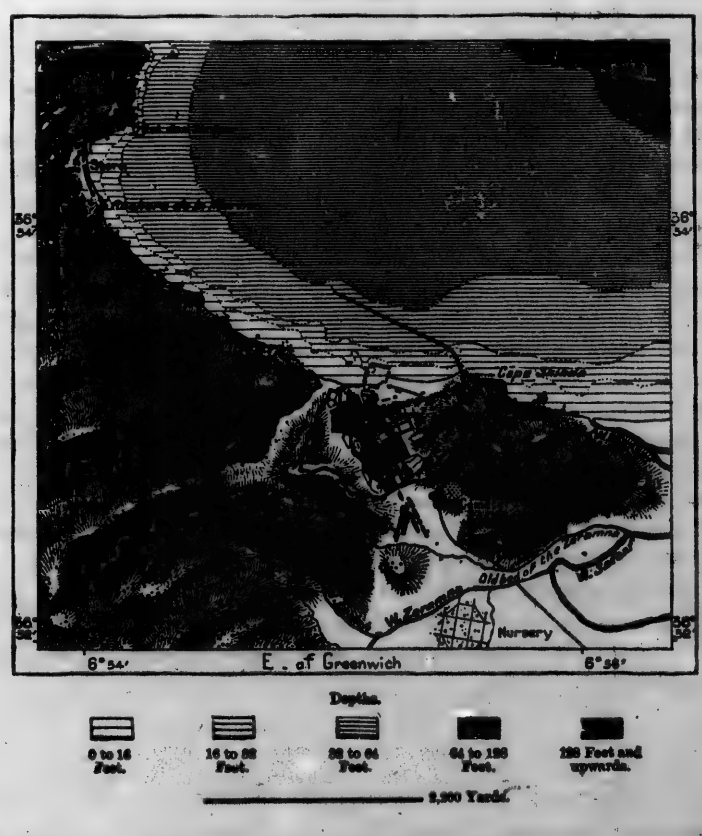
*Philippeville*, the seaport of Constantine, is not such a modern place as its name might suggest. It occupies the site of the old Phœnician *Rus-Licar*, the *Rusicada* of the Romans, modified to *Ras-Skikda* by the Arabs, and to *Tasikda* by the Berbers. But since its occupation by the French in 1838, most of its monuments have disappeared, having been utilised for the erection of the extensive fortifications which follow the crest of the hills from east to west, enclosing the whole town and large open spaces. There still remain, however, the ruins of a theatre

partly excavated in the cliff, numerous cisterns, and some fine mosques, besides the statues, busts, urns, and inscriptions preserved in the museum.

The town occupies a ravine between the two ridges of *Bu-Jala* and *Jebel Addun*, east and west. The main thoroughfare, running along the old bed of a stream, terminates seawards in an elevated terrace, whence a view is commanded of the esplanade and of the inner and outer harbour, the former covering an area of 50 acres, and enclosed by jetties, the latter much more extensive, but insuffi-

Fig. 92.—Philippeville.

Scale 1 : 88,000.




ciently protected from the surf. Before the construction of the present harbour works the shipping was obliged to seek refuge at *Stora*, the old "Genoese port," which lies 2½ miles north-west of Philippeville, at a point sufficiently protected from the west and north winds.

A somewhat analogous position is occupied by *Collo*, the *Chullu* of the Romans, and *Kullu* of the natives, which is also sheltered by a headland from the west and

north-west winds. The Romans had some purple dye-works at this port, which during the Middle Ages was much frequented by Italian and French traders. Since its occupation by the French in 1845, Collo has again become a flourishing seaport, doing a considerable export trade in minerals, cork, sardines, and other local produce.

About midway between Collo and Bougie stands the ancient seaport of Jijili, which still preserves in a slightly modified form its Libyan name of Igilgili, handed down by inscriptions from the very dawn of history. The tombs excavated in the cliffs along the coast are the work of Phœnician colonists, as shown by their perfect

Fig. 93.—Jijili.
Scale 1 : 25,000.

resemblance to those of the old Syrian necropoli. During Roman, Byzantine, and Mediæval times, Jijili continued to enjoy a considerable degree of commercial prosperity; but after its capture by the Turks in 1514 it fell into decay, and at the French occupation in 1839 was little more than a fishing village. Since 1871, when the surrounding tribes were finally reduced, it has recovered some of its former trade, and the new town, laid out in regular shady streets, has spread within the fortifications from the old town to Fort Duquesne, erected on a rocky headland towards the south-east. Jijili, which is one of the healthiest places on the Algerian coast, is encircled by a fertile tract cultivated by Spanish and Maltese colonists.

The port, already sheltered from the west, might be easily protected from the north by filling up the gaps in a coral reef, which stretches from the old town eastwards to an islet, on which a lighthouse has already been constructed. The neighbouring villages of *Duquesne* and *Strasbourg*, on the route to Constantine, have become independent centres of European colonisation.

In the Wed Sahel basin the chief place is *Setif*, the Roman *Sitifis*, which, thanks to its central position at the converging point of several routes across the plateau, became in the fourth century the capital of one of the Mauritanias. But for some time after the French occupation it was a mere military station, affording protection to a small European settlement. Since then it has increased rapidly, and is now an important agricultural centre, surrounded by several large rural communities. Some of these places owe their origin to a colonising society of Geneva, which has acquired 50,000 acres of rich land from the French Government.

Next to Setif, the largest commune in this district is *Ain-Abessa*, which lies on the slope of the Maghris, between the two routes over the hills connecting Setif with the port of Bougie. One of these routes runs through *Takitunt*, *Kerrata*, and the gorges of the Tababor, the other through Ain-Rua and the Wed Guergur. Both are remarkable monuments of engineering skill, presenting in their descent from the plateaux to the coast some aspects of imposing grandeur.

The modern town of *Bu-Arrerij*, the chief place in the fertile Mejana Valley, stands at an elevation of over 3,000 feet, near the waterparting between the Wed-Sahel and Hodna basins, and midway between Constantine and Algiers, on the railway connecting those cities. Before the conquest, Bu-Arrerij held a position of great strategic importance near the gorges of the Bibân range leading from the plateaux to the Sahel Valley. About 15 miles north-west of this point, on a bluff in the same range, stands the chief stronghold of the country, the *Kalaa* (Gala, Guela), or "Castle" in a pre-eminent sense. This citadel of the powerful Beni-Abbes tribe also served as a place of refuge for those flying from the wrath of the Deys and their vassals. Here are woven burnouses highly prized in every part of Algeria.

### Aumale—Bougie.

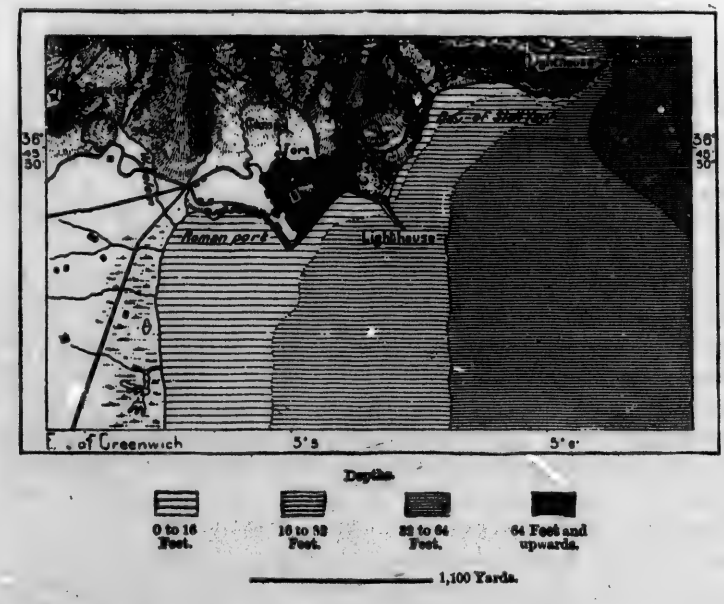
In the western part of the Wed-Sahel basin, *Aumale*, the Roman *Auzia*, occupies a strategic position similar to that of Setif and Bu-Arrerij farther east. After the French occupation in 1846, its defensive works were restored, and it soon became one of the chief bulwarks of their power in the interior of Algeria. It has also become the centre of a large trade in cereals, wool, leather, dates, alfa, live stock, and other produce of the Tell. But lying beyond the network of railways, Aumale is a very quiet place, except on market-days. Here have been found numerous sculptured fragments and inscriptions, the remains of the ancient Auzia. In the neighbourhood are the populous villages of *Bir-Rabalu* and *Ain-Bessem*, and lower down the Sahel Valley the fortalice of *Beni-Mansur*. Of the numerous agricultural settlements founded in this district, the most important is *Ak-bu*, officially known

by the name of *Metz*. It lies at the issue of the route descending from Great Kabylia over the Shellata Pass. The whole valley is strewn with Roman remains, and here stood the city of *Tubusuctus*, whose site is still unoccupied by any modern town.

*Bougie*, the *Saldæ* of the Romans, is a decayed place, although since the middle of the century it has recovered most of its former population. It was twice a royal capital, first under the Vandals before the capture of Carthage, and again under the Beni-Hammads at the close of the eleventh and beginning of the twelfth century, when it is said to have contained no less than twenty thousand houses. Even after ceasing to be a political centre, *Bejaïa*, so named from one of the

Fig. 94.—Bougie.

Scale 1 : 84,400.




neighbouring hill tribes, continued to enjoy considerable commercial prosperity, thanks to the advantages of its port, one of the most sheltered on the Algerian coast. At this point Mount Lalla Guraïa, over 2,300 feet high, advances seawards in the direction from west to east, the bay thus enclosed being completely protected from the dangerous west, north-west, and north winds. Its relations with Europe became so frequent that, at the beginning of the fourteenth century, Bougie placed itself under the protection of the kings of Aragon, in order to contend successfully against the other seaboard towns. But the period of legitimate trade was followed by one of piracy, during which Bougie became a nest of daring corsairs. Reduced in 1509 by Pedro of Navarre, it was retaken by the Turks in 1555, after which it

lost all its trade until its recent revival under the French. But it is still far less extensive than in its prosperous days, of which its most interesting monument is the Bab-el-Bahr, or "Sea Gate," a Moorish archway forming part of the old ramparts. Bougie, which lies at the natural issue of the vast basin stretching from Setif to Aumale, is connected by a regular service of steamers with Marseilles, and will soon enjoy the advantages of railway communication with Algiers through Beni-Mansur, and with the interior by a line running through the Babor and Biban hills to Setif.

## Kabylia.

The section of the Jurjura highlands enclosed by the rivers Sahel and Isser usually takes the name of "Great Kabylia," in contradistinction to the "Little Kabylia," which comprises the rugged Biban and Babor uplands. The term *Kabylia* itself has no ethnical value, being simply the Arabic *kabila*, or "tribe," applied in different districts to populations of the most diverse origin. In Mauritania it was applied by the Mussulman invaders to all the non-Arab peoples driven by them from the plains to the uplands. It thus gradually acquired a degrading sense, and the Algerian Arabs now more usually designate their own tribes by the equivalent word *arsh*. On the other hand, the Berber Kabyles of the Jurjura highlands, descendants of the ancient Sanheja confederation, call themselves Imazighen, or Amsigh, that is, "Freemen," a word identical with the Maxyes of Herodotus.

The great bulk of the Kabyles, whatever their origin, certainly seem entitled to this name, for to preserve their freedom they took refuge in the mountains, where they successively resisted the Roman, Vandal, Byzantine, Arab, and French invaders. The Bled-el-Adua, or "Hostile Land," as the Arabs call these mountains of Kabylia, although now one of the most densely peopled regions in North Africa, appears during the early historic epoch to have been but sparsely inhabited. Every fresh wave of conquest contributed a fresh contingent of fugitives, who gradually took their place side by side with the previous occupants. Thus is explained the great diversity of types, ranging from the Negro to the Caucasic, represented by the present inhabitants of the Jurjura highlands and valleys. Of more or less mixed Negro blood are the Abid, or "Slaves," of the Boghni district in the south-west; while a Jewish origin is claimed for the Ait Bu-Yusef, dwelling on the northern slope of the main range south of Fort National. The Ait Fraucen, probably owing to the resemblance of their name, have been affiliated to the French, and the Ait Ijermenen for the same reason to the Germans. Amongst the latter, however, who are settled in the district between Bougie and Azeffun, many are found of a fair or ruddy complexion, and in their features bearing a marked resemblance to the Germans.

Nevertheless the Jurjura tribes may be said on the whole to represent the old Berber population, and amongst them are probably to be sought the purest descendants of the primitive Mauritanians. According to a national legend, they are "sprung of the soil," although in other traditions allusion is made to peoples

anterior even to the present Kabyles. These are designated by the term Juhala, applied also both to Romans and "pagans." In many places occur circular holes filled with refuse, which appear to have served as human habitations. A local legend, similar to that current in the Altai region regarding the mysterious "Chudes," relates how a denizen of these half-subterranean dwellings, on falling seriously ill and feeling his end approach, sawed asunder the post supporting the roof, then with a last effort pushing the post aside, buried himself beneath the ruins.

At present the population of Great Kabylia, with an area of 2,200 square miles, may be estimated at about half a million, or over two hundred to the square mile. Were this proportion maintained throughout the whole country, from the Mediterranean to the verge of the desert, Algeria would have a population of some forty millions. But before the French occupation, incessant intertribal warfare prevented the natural growth of the people. The Kabyles, who are grouped in at least a hundred tribes and over a hundred secondary clans, are also divided into *soffs*, or political factions, which are constantly uniting, breaking asunder, and reconstituting themselves, according to the shifting interests and passions of the several groups. Warfare was their destiny, said the natives themselves, a curse of Lalla Khedija having condemned them to everlasting discord. The confederations formed from time to time against a common enemy seldom lasted long, after the passing danger the league being dissolved and each fraction resuming its autonomy. Nevertheless the Kabyles were conscious of the ties of kinship connecting all their tribes, and the memory of their common origin was perpetuated by ethnical names common to the whole nation. The term *Ait* is used to indicate a federal union, not community of origin, like the Arab word *Ulâd*, which is reserved for tribes of Semitic descent; while *Beni*, also an Arab word, is applied to both races, but especially to the Kabyles.

The chief tribal group is that of the Zwawa (Igawawen), whose name has been frequently used in a collective sense for all the Kabyles. In Tunis it was still recently applied to the Berber highlanders, and during the early days of the French occupation it served, under the form of "Zouave," to designate contingents of native troops recruited chiefly amongst the Kabyles. The Zwawas, numbering about one hundred and fifty thousand, occupy on the northern slope of the Jurjura nearly the whole Upper Sebau basin, nearly to its confluence with the Wed Aissi. To this family belong the Ait-Yahias, whose central village of *Kuku* or *Kuko*, occupying the site of an old Roman station, was formerly regarded as a sort of capital for the whole of Kabylia, although containing scarcely more than sixteen hundred inhabitants. The Ait-Fraucen are also Zwawas, and in their territory is situated the formerly important town of *Jemaa-es-Sahrij*, or "Collection of Basins," so named from the numerous reservoirs constructed in this district during the Roman epoch. In the same group are classed the Ait-Batrun, settled west of the Wed Aissi, and the brave Ait-Iraten, whose village of *Isheraiouen* has been replaced by *Fort National*, the chief French stronghold in Great Kabylia.

In the upper Wed-Bu-Gdura basin, towards the south-west angle of these

uplands, dwell the Gueshtula or Igueshdulen, who are usually identified with the ancient Getulians, and who differ in many respects from the other inhabitants of the Jurjura district. They are a small "bullet-headed" people, less cultured than the Zwawas, living in wretched hovels, and occupied chiefly in tending the herds of their more powerful neighbours. Near them are the Abida, descended of emancipated Negro slaves, and farther north the formerly powerful Mahacta tribe.

The West Kabyle highlands are occupied by the Flissa-um-el-Lil, or Flissa of the Night, called also Flissa of the Woods, descended of the warlike Issafl·nses, who maintained a long struggle against the Romans. The Flissa of the Sea, another branch of this group, separated from their brethren by the Isser, the Ait-Waguennun, and other communities, were formerly noted armourers, whose swords, modelled on the Roman gladium, and worn by most of the natives, still take the name of "flissa."

Amongst the other Kabyle groups, the most important are the Zarfawa of the Aseffun district, the Bu-Daûd at the north-east extremity of Kabylia, and the Ait-Gobri east of the Zwawas. On the outer flanks of the Jurjura are also some powerful tribes, such as the Ait-Ughli, between Akbu and Bougie; the Illula Assamer, or Illulas of the Sun, so named in contradistinction to the Illula Umalu, or Illulas of the Shade, residing on the northern slope of the Upper Jurjura; and the Ait-Mlikesh, bordering on the Beni-Mansur marabuts, who occupy several villages south of the Wed Sahel. Lastly, in the Lower Sebau Valley are settled the Amarawa people, who comprise the most diverse elements, and who long constituted a makhzen, or military tribe, in constant feud with its neighbours.

In Great Kabylia ethnologists recognise two predominant types, one distinguished by round features, prominent cheek-bones, pointed lower jaw, probably representing the aborigines; the other with flat, oval face, small bright eyes, nose depressed at the root, projecting upper incisors. In general the Kabyles are of middle size, strong and muscular, but mostly tainted with syphilitic diseases.

But however different in physical appearance, all the Kabyles of the Jurjura and eastern ranges are one in speech, speaking Zwawia, a Berber dialect affected by Arab elements in the proportion of about one-third. From Arabic are usually borrowed terms relating to mental or moral subjects, to religion, law, the arts and sciences, and to such plants, animals, and other objects as have been introduced since the Mussulman conquest. In the same language are composed the few works read by the cultured Kabyles, whose mother tongue is no longer written; in fact, the only literature it possesses are some theological tractates and a few songs, differing from the ordinary language of conversation by a larger infusion of Semitic elements. Thus the Kabyle gradually acquires a knowledge of Arabic, and wherever the rival tongues meet on common ground, the more useful tends to prevail.

The essential difference between the two races lies in the greater love of a nomad life shown by the Arab, the Berber everywhere preferring a fixed abode and agricultural pursuits. He betrays the same passion for the soil as does the

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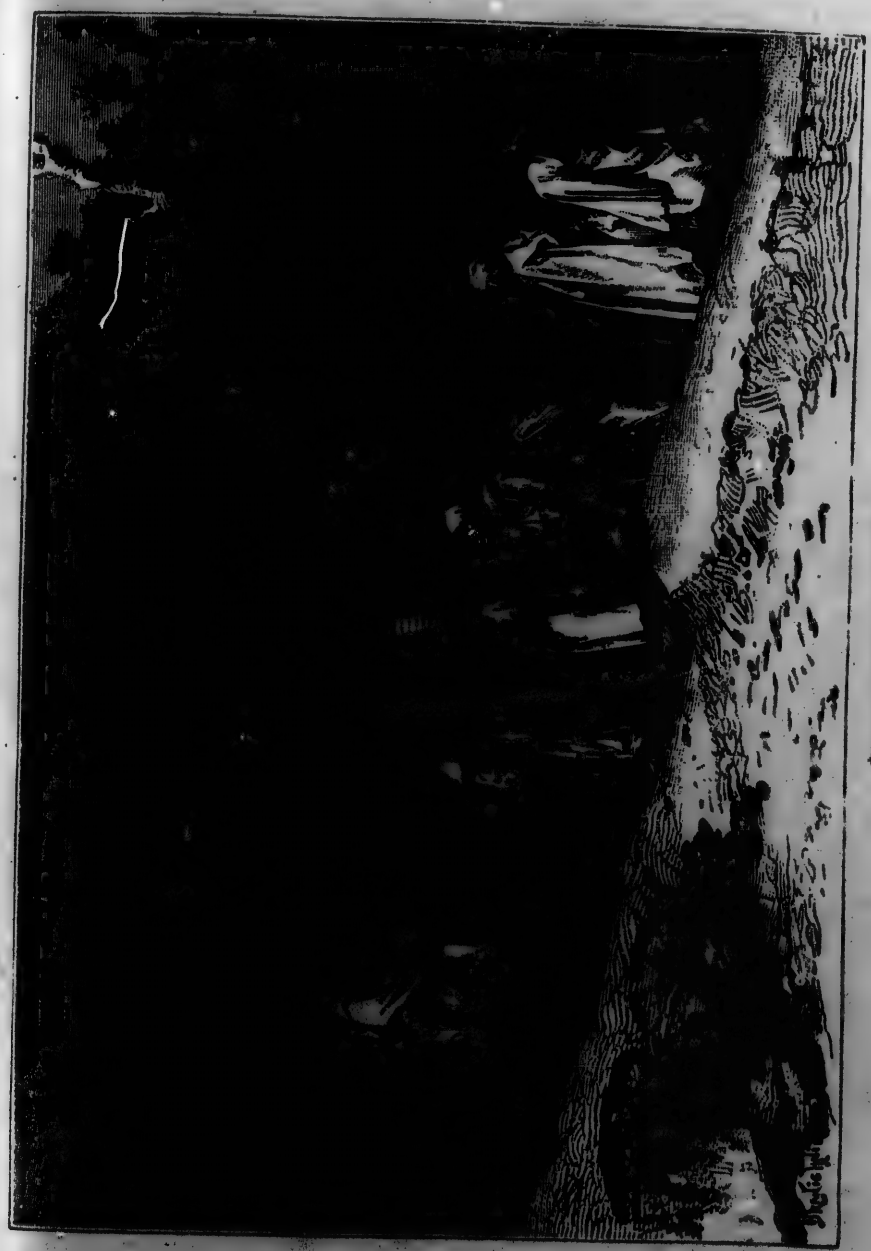


KABYLE FAMILY TRAVELLING.

French peasant, and thanks to this quality, the rugged slopes of the hills, formerly strewn with stones or overgrown with scrub, are now clothed with the olive and other useful plants. "What would become of me," cries the land in a native legend, "were man to forsake me? Must I return to my first state, and again become the haunt of wild beasts?" So minutely is the land subdivided, that in

Fig. 95.—Zwawa and Ait-Iraten Territory.
Scale 1 : 180,000.

some cases a single olive-tree is shared among several owners. Hence the soil has acquired an excessive value in the more densely peopled tracts, the average price being from twenty to a hundred times higher in the Kabyle than in the Arab districts.

Nor are the Berbers less distinguished for their industrial than for their

agricultural skill. Amongst them all labour is respected, even that of the blacksmith, which is regarded with such contempt by the Arabs. The various Kabyle tribes have each their special industry, so that at the fairs held successively in each village on different days during the week, buyers may obtain all manufactured articles of which they stand in need. In many Zwawa tribes the women excel in the production of beautiful vases; in others coarse earthenware is prepared; the Illiltens and Illulas of the Jurjura uplands devote their attention to wood-carving; the Bu-Shaib and Ait-Ijer clans in the eastern highlands occupy themselves with weaving; the Ait-Fraucen with iron-work; the Fenaia and Ait-Yenni with arms and the preparation of warlike supplies of all sorts. The last mentioned are also

Fig. 96.—Chief Tribes of Kabylia.

Scale 1 : 1,200,000.

A. Ait. B. Beni. O. Oulad.

80 Miles.

jewellers and metal casters, melting down the Spanish douros and converting them into necklaces, rings, or diadems.

In the Kabyle districts the markets, supplied with objects of local industry and foreign importation, are very animated. Usually held near the cemetery outside the town walls, they become in political times popular gatherings for the discussion of public topics. Here were formerly decided questions of peace and war; but since the French occupation politics have given place to the interests of peaceful intercourse.

So dense is the population in Great Kabylia that the agricultural produce is insufficient for the local wants. Hence thousands yearly emigrate in search of a livelihood amongst strangers. Formerly many hired themselves out as mercenaries to fight for the Turk, and even still most of the Algerian "Zouaves" are recruited

amongst the Zwawa tribes. The Ait-Iraten and Beni-Abbes have settled in Algiers as bakers and bankers. But most of the emigrants become porters in the coast towns, or else pedlars and hawkers in the rural districts. Whole colonies become associated with the Arab tribes on the plains, where they gradually acquire possession of the land. In this way several Kabyle villages have sprung up in the vicinity of Guelma, Shershell, Aumale and other towns. Since the cessation of tribal warfare, the rapid increase of population even obliges the Kabyles constantly to widen the field of migration, and they have already begun to invade Tunisia, the oases of the desert, and Marocco. The number of temporary or permanent emigrants has thus risen from about twelve thousand in the middle of the century to some forty thousand at the present time.

The Kabyles have all the sterling qualities of true peasants—patience, frugality and thrift. Extremely honest and incapable of deception, they exact from others the same probity in their mutual dealings. But notwithstanding their careful habits and strict attention to the main chance, they can at times unbend, and willingly indulge in social amusements, songs, and merry-makings. However conservative of the old usages, they are less slaves to routine than the French peasantry. They gladly introduced the potato into their gardens, and have recently taken to cultivating the vine in a large way on the outer slopes of the Jurjura highlands. They are above all distinguished by their excessive love of personal independence. All want to be "sultans at home;" all speak of their honour, and have constantly on their tongue the Arabic word *nif*, which properly means "nose," but which symbolises personal dignity and sensitiveness. But their self-respect is not shown in any love of fine clothes. The gandura is worn till it falls to pieces, nor is it always easy to detect the original colour of the national sheshia. The houses also, in which oxen, goats and poultry have their share, are often unspeakably foul. "The Kabyle never dreams of sweeping his dwelling until the time comes for manuring his vegetable garden."*

The Kabyle marriage is a strictly business transaction, the wife being purchased of her parents for from £8 to £40, according to their rank and influence, or her personal charms. "The father eats his daughter," says the local expression, "when he squanders the sum received as her dowry." On the other hand, once master of the bride, the husband may send her back at pleasure, in which case the parents may again offer her for sale, on condition of returning the whole or part of the purchase-money to the first husband. Nothing is simpler than the form of divorce, a single word thrice repeated sufficing to dissolve the union. The husband's authority is absolute, and in several tribes he formerly placed a stick by the side of his bride, a formality needing no verbal interpretation. Infidelity on her part is severely punished; before the French occupation she was usually condemned to be stoned, and even still most of the murders committed in Kabylia are due to the secret observance of the old law. Nevertheless, the wife enjoys great freedom in domestic affairs, and when badly used by her husband may even take refuge with her parents. She also goes abroad unveiled, but never alone.

* L. Féraud, "Revue Africaine," November, 1863.

Numerous cases have been recorded of women acquiring a predominant influence in the tribe, either as heroines or prophetesses, and their shrines are no less venerated than those of the marabut saints. The widow enjoys equal rights with man before the law, and like him may purchase, sell, or bequeath property. Already in some of the tribes a certain evolution has begun in the direction of a new constitution for the family, and, acting under the advice of their French friends, several communities have decided that girls shall no longer be given in marriage before the age of fourteen. The establishment of French schools, in which the native women give proof of great zeal and intelligence, has also greatly contributed to their emancipation.

All these social changes will easily be accomplished, because, unlike the Arabs, the Kabyles are not bound by the letter of the Koran. They have their own laws, or rather their traditional usages, designated by the name of *kanún*, or "canons," a term obviously borrowed from their former Byzantine rulers. According to the local traditions, they were at one time Christians, and the old religion would seem to be still symbolised in the crosses tattooed on the women's faces, and even on some of the men, and in some of the tribes sculptured on the doors of the houses and of the very mosques. But however this be, their Christianity does not appear to have greatly modified their habits and ideas. After calling themselves Christians, they called themselves Mussulmans, adopting a few rites from Islam, but seldom showing any zeal for the faith. They neglect the prescribed prayers, and are far from strict observers of the Ramadan fast. The echo of the mountain, they say, when consulted to know whether they might eat, replied "Eat!" Scarcely a hundred Kabyles make the yearly pilgrimage to Mecca, and then more in the character of traders than of devotees. Most of their ceremonies seem inherited from pre-Mussulman and pre-Christian times; they still worship the divinities of nature, who control the winds and the rain, who give fertility to the soil and to the cattle. On certain days processions are formed in honour of the ancient goddess, "Bride of the Waters," represented by a dressed-up doll. These are the "Rogation days," which in the course of ages have already been adapted to three successive cults.

The descendants of the Arab conquerors still reside in Kabylia without mixing with the surrounding populations. Such are the so-called "Marabut families," sometimes numerous enough to form veritable clans. Those of the Jurjura district claim to have come from the west, and some local names would seem to show that the Andalusian Moors are largely represented amongst them. They are confined to special villages, usually situated below those of the tribe, whose liberty is thus secured from attack. The Marabuts act as advisers, and teach the children to recite verses from the Koran. But depending for their support partly on voluntary contributions, they have acquired indolent habits, and their villages, even when situated in fertile districts, are mere collections of wretched hovels.

In recent times the Mussulman confraternities have made great progress amongst the Kabyle populations. Some of their monasteries established in the midst of the tribes are encircled by a neutral zone interdicted to all belligerents.

The most influential of these religious communities is that of Ben Ali Sherif, at Shellata, on the outer slope of the eastern Jurjura uplands. The head of this zawya has become a sort of prince, one of the most distinguished natives in Algeria.

Although greatly modified by the French conquest, Kabyle society still preserves in its political constitution distinct features, rendering it of the most original and remarkable of human associations. Carette, Féraud, Hanoteau, Sabatier, and other observers speak of it with amazement, and assure us that even the most cultured nations might learn much from these hitherto despised high-

Fig. 97.—Kuku and Shellata Pass.

Scale 1 : 125,000.

landers. Wherever military regulations or the civil administration have not arrested the free play of the old usages, every *taddert*, or village, constitutes a little self-governed commonwealth, in which rich and poor, young and old, have all alike their share. At the age of fifteen the youth becomes a citizen, and, if strong enough to shoulder his musket, has a right to vote; only he is expected to show to his elders the respect due to age. The *jemâa*, or assembly, composed of all the citizens of the several *kharubas*, meets once a week, oftener in cases of emergency, delivers sentence, and appoints those who have to give it effect. In the assembly are centred all powers, political, administrative, and judicial. It hears charges

against persons accused of dishonourable acts, or of offences against the rites of hospitality, and its sentences usually take the form of fines, which go to replenish the communal coffers. But whoever brings disgrace on his tribe must leave it, the sentence of banishment being followed by the demolition of his house. Imprisonment is never inflicted on any one, freedom being too precious a treasure to be forfeited even by criminals. The bastinado and blows of any sort are also considered as degrading offender and executioner alike. Death was restricted to cases of high treason, but every citizen retained the right of inflicting personal vengeance on his enemy. "Murder is a loan which must be repaid," says the local proverb.

To administer the commune in the name of the jemâa, an *amin* is chosen, usually amongst the wealthier classes, because no salary is attached to the office. He is often even obliged to incur heavy expenses, and if he accepts the position of a public servant, he does so on the condition of acquiring nothing but a certain honourable distinction for himself and his family. He holds office so long as he performs his duty; but the moment he ceases to give satisfaction to his fellow-citizens, he sees in their attitude of disapproval that the time has come for him to resign, without waiting for a formal vote of censure. Measures have also been devised to prevent him from favouring the interests of the *soff* (majority) to the detriment of the minority. He is elected by the soff, but the minority always nominates the treasurer, who disposes of the revenues, and thus all interests are consulted. Moreover, each soff constitutes a sort of commune within the commune, and in alliance with the corresponding soffs of the neighbouring districts, and even of distant confederations. Associations of all sorts assume a thousand forms in Kabylia, at one time restricted to a particular branch of industry, at another embracing several family groups, and constituting one large family analogous to the Servian *zadruga*. But in all cases the responsibility of the associated members is of a joint character, the "limited liability" principle of European companies being unknown amongst the Kabyles.

Thanks to this spirit of republican solidarity, abject poverty is of rare occurrence. Without sacrificing their personal dignity, those in temporary distress receive from the commune such aid as they stand in need of. Occasionally public repasts are held, in which rich and poor must all alike take part. The builder of a house claims by right the assistance of the whole village; those engaged in manual labour, or in harvesting their crops, may also rely on their neighbours' help; while a general *corvée* is instituted to till the land of those no longer able to work for themselves. Thus all claim and return mutual aid to all. Even towards the distressed stranger the Kabyle is bound to show friendship, guiding him through the storm, and giving him food when pressed by hunger. During the terrible winter of 1867-8, when thousands of natives perished in the French settlements, mendicants flocked from all quarters towards the Jurjura highlands, where none were allowed to starve.

It might be supposed that a nation divided into as many little democracies as there are villages, would be powerless against foreign aggression. On the contrary,

it displayed greater strength than the little centralised Arab states, in which the subjects, following one leader, were vanquished or surrendered with him. In the presence of a common danger confederacies were formed between the different tribes, and young men hastened from all parts, vowing to sacrifice their lives for the common weal. Before the battle the prayer for the dead was read over them by the marabuts, and they in truth seldom cared to survive defeat. All recognised the virtue of the *anaya*, an Arabic word meaning "protection," but also used in the sense of "honour," spoken of as "the beneficent king of the Kabyles, who levies no taxes." Should war break out between the septs, the women were forthwith placed under the joint anaya of the contending factions; in the same way certain roads, districts, or days were reserved by being placed under the same collective guarantee, answering to the "truce of God," which in Europe afforded some respite from the everlasting feuds of Mediæval times.

And now that the French in their turn have proclaimed the universal anaya amongst the tribes, they already feel themselves half assimilated to their new masters, and religiously observe the peace. Many are even proud of the privilege of naturalisation, and but for the fear of being rejected, whole tribes would ask to be enrolled as French citizens. Primary instruction daily spreading, and already obligatory and gratuitous in some communities, will soon raise the whole nation to the same level as many so-called "Aryan" peoples. Assuredly a bright future may be predicted for this brave and industrious race, which, under the name of "Arabs," has already rendered an immense service to mankind by preserving and developing in Spain the knowledge bequeathed by the Hellenic world, at a time when all science was threatened elsewhere with extinction under the night of the Middle Ages.

Over the heights, terraces and headlands of Great Kabylia are scattered some fourteen hundred villages, some containing from two thousand to two thousand four hundred inhabitants. Although mostly forming a mere aggregate of huts pressed close together, a certain order may still be detected in the distribution of the different quarters. All persons belonging to the same family group constitute a *kharuba*, whose dwellings form a distinct district, while the streets or lanes of all the kharubas converge in the jemâa, or place of public assembly. In the centre of this open space an arcade between two houses serves to shelter the benches on which are seated the elders presiding over the popular gatherings.

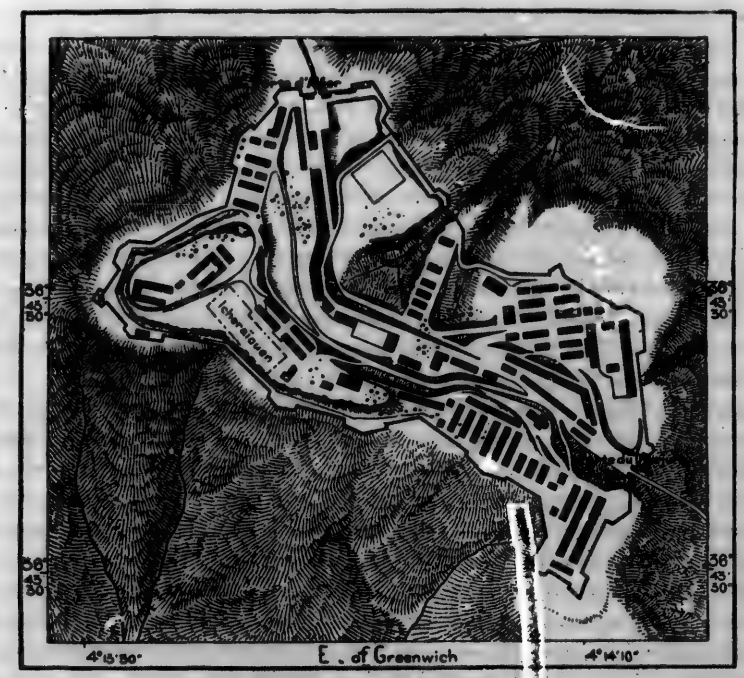
But even in the densely peopled Jurjura district there are no towns properly so called. *Fort National*, the military capital, is a mere collection of barracks, magazines, taverns, and a few private houses, with promenades and gardens, surrounded by an irregular enclosure, which follows the crest of the hill and falls from terrace to terrace down the steep slopes, whence a view is commanded of a vast horizon. The present fort was built in 1857, nearly in the geographical centre of Great Kabylia, in the midst of the powerful confederation of the Ait-Iraten tribe, whose black villages crown all the surrounding heights. The great elevation of Fort National (3,050 feet above the sea), giving it the military command of the whole country, prevents it from becoming a large centre of trade and population.

An eminence in the Beni-Yenni territory, towards the south-west, is occupied by *Beni-Yahsen* (the Arab *Beni-el-Hassen*), the largest Kabyle village in the whole of the Jurjura country. Here are four mosques and some sixty workshops, where arms and jewellery are manufactured.

### Tizi-Uzu—Dellys—Menerville.

In the valleys of the Sebau and its tributaries, the European settlers have already founded several villages, such as *Azazga*, *Freha*, *Mekla*, and *Temda*, which

Fig. 98.—Fort National.
Scale 1 : 8,000.




275 Yards.

follow from north-east to south-west along the line of the future route between Algiers and Bougie. But at present the trade of this district is centred in the modern town of *Tizi-Uzu* (the Arab *Fej-el-Guendul*), which lies at an altitude of 850 feet to the west of an extensive plain where the Wed Sebau and Wed Aïssi unite their turbulent waters. Few places in Algeria have developed more rapidly than this administrative capital of Kabylia, whose market is frequented by thousands of natives from the surrounding districts. In the hills to the north-west

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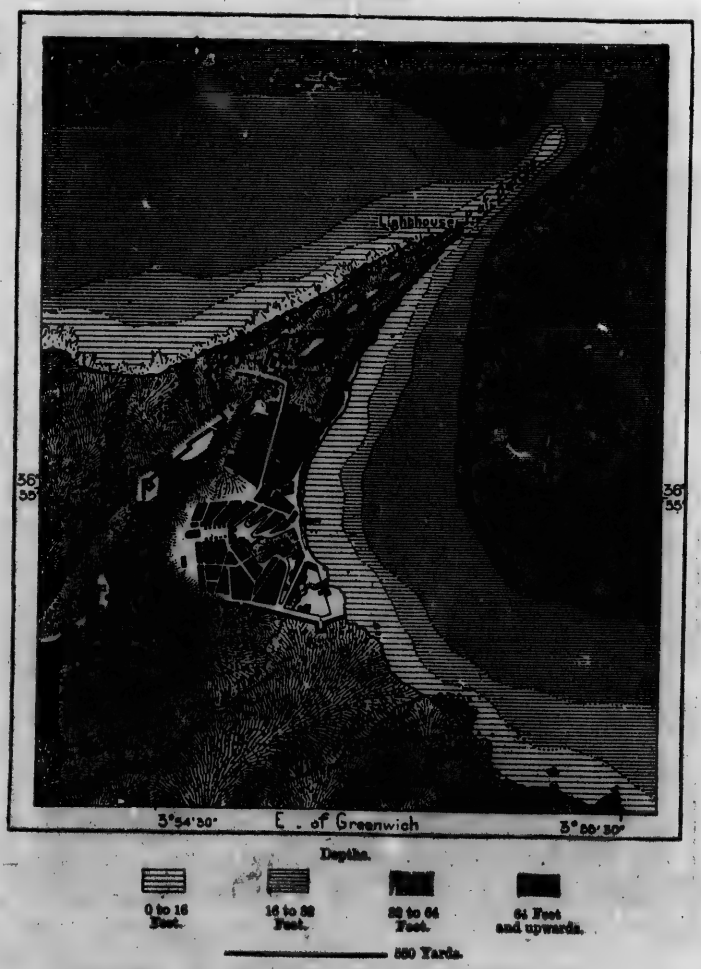
KADER VILLAGE.

was discovered the remarkable Berber stele of Abizar, representing a naked warrior armed with shield and three javelins.

Besides the railway which will soon connect Tizi-Uzu with Algiers, another line is intended to ascend the valley of the Wed Bu-Gdura, towards the flourishing

Fig. 99.—Dellys.
Scale 1 : 20,000.




village of *Borj-Boghni*, lying at the foot of a fortified hill. About 10 miles farther west lies the town of *Dra-el-Mizan*, which although no longer classed as a military post, occupies an important strategical position commanding the southern approach to Great Kabylia.

In the Lower Sebau Valley, some thriving places have recently sprung up,

including *Rebeval*, *Uled-Keddash*, and *Bois-Sacré*. But *Dellys* or *Dellis*, the outport of the district, lies not at the mouth of the river, but more to the east, under a headland sheltering it from the north-west winds. It consists of one long street and a few lanes on the slope of a hill terminating at Dellys Point, where a break-

Fig. 100.—Palestro and Gorges of the Isser.
Scale 1 : 178,000.

water, intended to protect the roadstead from the north and east winds, has already been carried some 300 feet into the bay. A school of arts and industries, one of the chief institutions of the department of Algiers, has been founded in Dellys for the benefit of the surrounding Kabyle population. On the exposed coast running

eastwards, the only European stations are *Tiksirt*, near the little port of Taksebt, and *Azefun* (*Zeffun*), called also *Port Guedon*.

Near the waterparting between the sources of the Isser and the eastern slope of the Shelif stands the rising town of *Berwagha*, an important agricultural centre, where the French have established a model farm, a school of agriculture, and a rural convict station containing over a thousand criminals. Below the abrupt bend of the Isser round the hills of Great Kabylia lies *Palestro*, a flourishing place founded since the opening of the road which penetrates through the gorges of the river, and which is now accompanied by a railway. Since the massacre of some

Fig. 101.—Lower Sebau and Isser Valleys.
Scale 1 : 270,000.

fifty Europeans during a revolt of the natives in 1871, Palestro has been strengthened by a strong citadel commanding the surrounding district.

The plain opening north of the gorges is one of the most densely peopled in Algeria. *Beni-Amran*, on the slopes of the hills, is followed lower down by *Blad-Guitun* on the left, and *Isserville* near the right bank of the Isser, in the centre of the plain. Near this place is held the great market of the Isser tribe, formerly a rendezvous for all the inhabitants of Kabylia. But the French conquest has modified the economic conditions of the country, while the importance of this market has been further diminished by the foundation of *Borj-Menaiel* in the

neighbourhood, and especially of the Alsatian colony of *Asib-Zamun*, officially known as *Haussonvillers*, some 6 miles farther down. Beyond this point the Isser winds through its broad valley to the coast near Cape Jinet, a bold basaltic headland not far from the site of the Roman station of *Cissi*.

About 4 miles west of the Isser market lies the broad Beni-Aisha Pass, at present occupied by the busy little town of Menerville. At this point the Tizi-Uzu branch effects a junction with the main line of railway between Constantine and Algiers.

### Algiers.

*Algiers*, capital of the "African France," still bears its Arabic name of El-Jezair, or "the Islets," derived from four reefs now connected with the mainland. It was founded in the tenth century, on the ruins of the Roman *Icosium*, in the territory of the Beni-Mezghanna tribe, and already in the beginning of the sixteenth century it had become powerful enough to attract the attention of the Spaniards, whose occupation of the place, however, lasted only nineteen years. The pier, constructed by the famous Kheir-ed-Din by connecting the reefs with the mainland, created a sheltered and commodious harbour, which henceforth secured for Algiers the first rank amongst the towns on the exposed Mauritanian coast between Bougie and Mers-le-Kebir. For three centuries it bid defiance to Europe, thanks partly to the pusillanimity of some and the jealousy of others. Eleven times besieged or threatened in vain, it was for the first time compelled to lower the crescent to the British fleet under Lord Exmouth in 1816, and was definitely occupied by the French in 1830.

At present Algiers holds the foremost position in Africa, not for its population, in which it is second to Cairo and probably also to Tunis, but as a centre for the diffusion of European culture throughout the continent. It is also unrivalled for its picturesque and imposing aspect, presenting a marvellous seaward view which leaves an indelible impression on the memory. Towards the crest of the hill crowned by the citadel is seen all that remains of the old town, which from a distance looks like a quarry of white marble strewn with irregular and rough-hewn blocks. But the native quarter, which formerly descended quite to the sea, now stops half-way, being arrested by the regular masses of European houses, which develop an extensive façade above the quays. South of the Arab town another quarter has sprung up along the slopes, consisting exclusively of modern dwellings, whose grey walls and red roofs contrast everywhere with the deep verdure of the surrounding gardens. Farther on the buildings are again abruptly interrupted by a green zone of grassy ramparts and wooded mounds. But at *Mustapha*, beyond the enclosures, the city is continued by the new and more open suburbs crowning every height, and affording a pleasant retreat to the English and other visitors who come to pass the winter season in the mild climate of Algiers.

The narrow space enclosed between the cliffs and the sea has compelled the rising city to develop itself along the coast-line on both sides of the old town, which down to 1830 was still confined to a triangular space on the hillside, some

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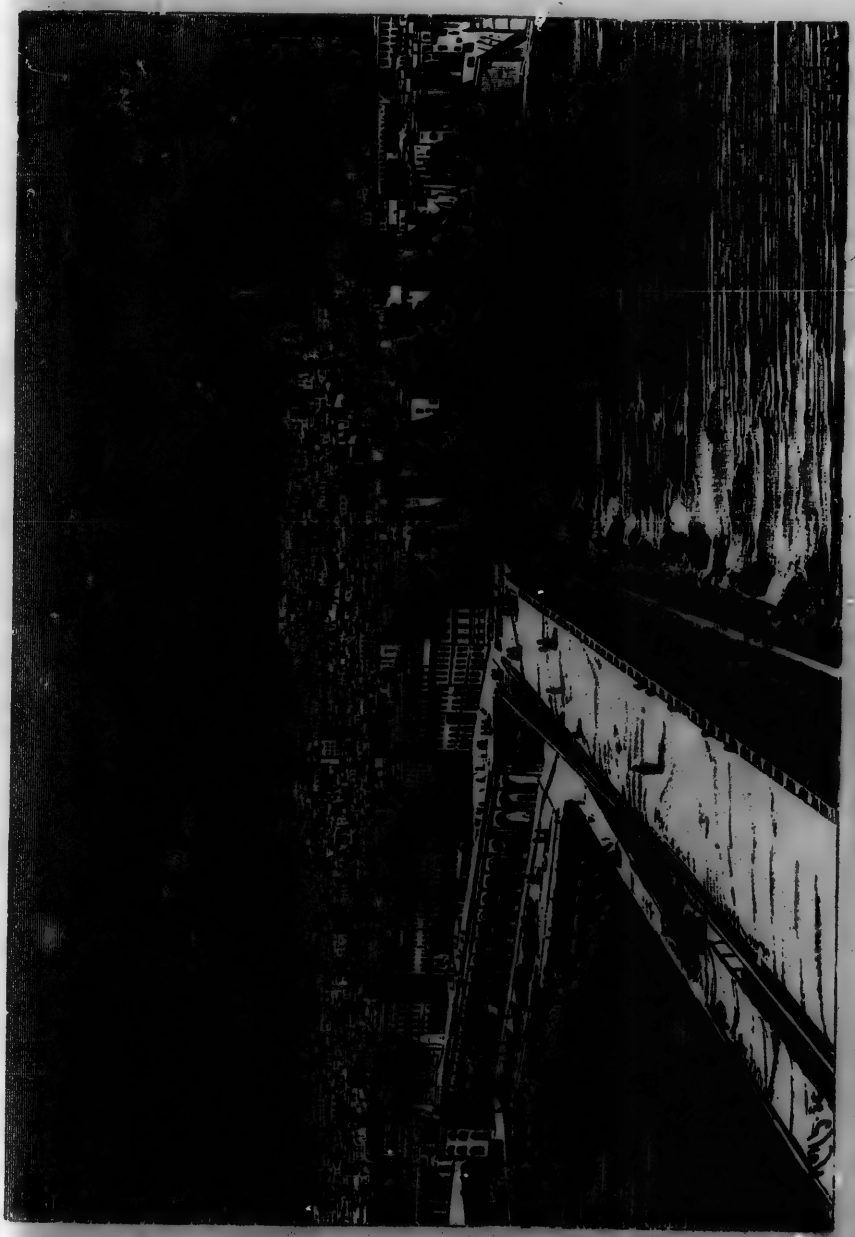


GENERAL VIEW OF ALGIERS TAKEN FROM THE KHER E-DIN PIER.

125 acres in extent, and commanded by the kasbah. At that time the population scarcely exceeded forty thousand, although commonly estimated at over one hundred thousand. The ramparts of this quarter were levelled by the French; but the new enclosures have in their turn become too narrow, and towards the north-west, beyond the Bab-el-Wed, or "River Gate," several suburbs, interrupted by cemeteries, follow in succession as far as the interminable Rue de Saint-Eugène.

Fig. 102.—Algiers in 1830.

Scale 1 : 22,000.

Southwards also the city is continued by the districts of *Agha*, *Mustapha*, and *Belcourt*, stretching away beyond the Bab-Azun, the gate where criminals were crucified, dead or alive. The united communes of Algiers, Saint-Eugène, and Mustapha have a total length of some 6 miles, although, at many points hemmed in between the hills and the sea, the city is scarcely more than 200 yards broad.

Notwithstanding this rapid expansion, the "Place du Gouvernement," forming the largest open space, has remained the chief centre of life and traffic, as it was

during the first period of the French occupation. Round it are grouped the "New" Mosque, with its town clock, the principal market, the Great Mosque, the Catholic cathedral, the Governor's palace, the Hôtel de Ville, and most other

Fig. 103.—Algiers in 1885.

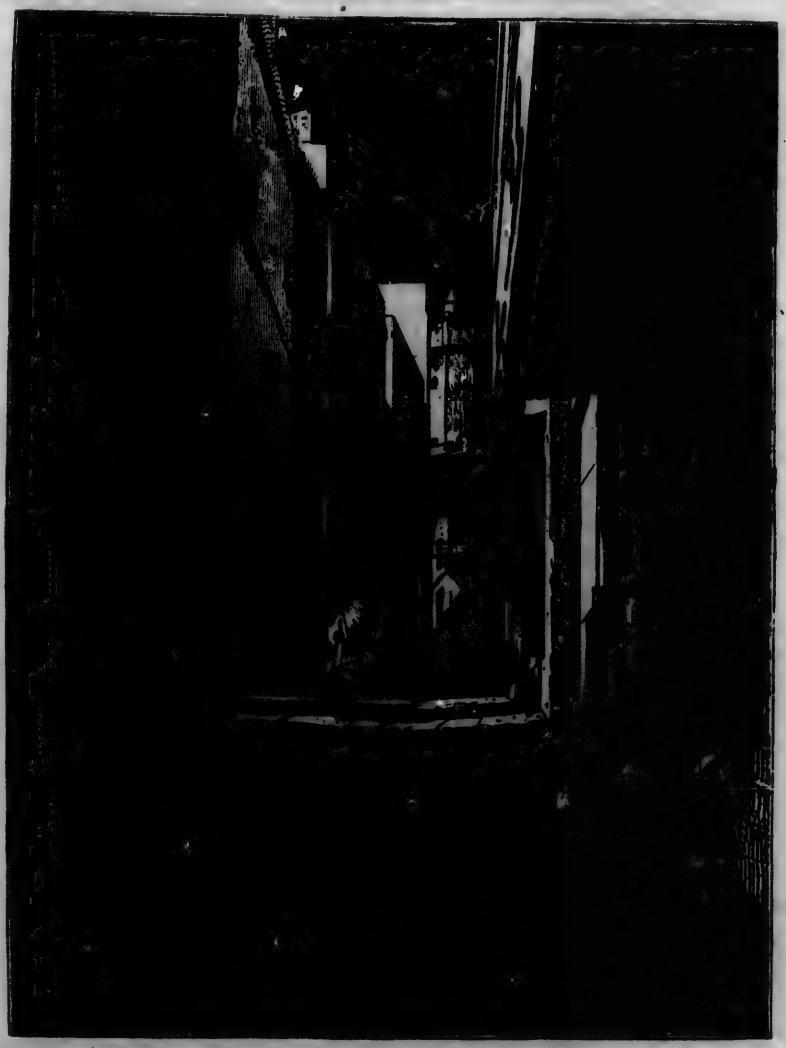
Scale 1 : 75,000.

public buildings. Here also converge all the busiest thoroughfares, and from this point radiate nearly all the highways for the outskirts and the inland towns.

In the city the population has grouped itself in separate zones according to its origin. The French occupy all the new quarters, while the Neapolitans,

Spaniards, and Maltese gravitate towards the lower parts in the neighbourhood of the port and the fisheries. The Jews, who own about half of the shops in the French districts, reside chiefly half-way down the slope between the Christians

Fig. 104.—Street View in the Old Town, Algiers.



and the Mussulmans, the latter being still mainly confined to the labyrinth of slums stretching thence upwards to the kasbah. This Mussulman quarter, which has undergone no change since the conquest, is inhabited, as in the time of the Deys, by a motley gathering of Kabyles, members of the Mzab tribe, immigrants

from the Tugurt, Wargla, and Sûf oases, and Bambara, Haussa, and other Negroes from Sudan. An ethnographic survey of the upper town may thus be compared to a journey in the interior as far as Timbuktu.

Notwithstanding the lofty and somewhat imposing structures erected under the French administration, the most interesting monuments are undoubtedly those

Fig. 105.—Military Limits of Algiers.
Scale 1:20,000.

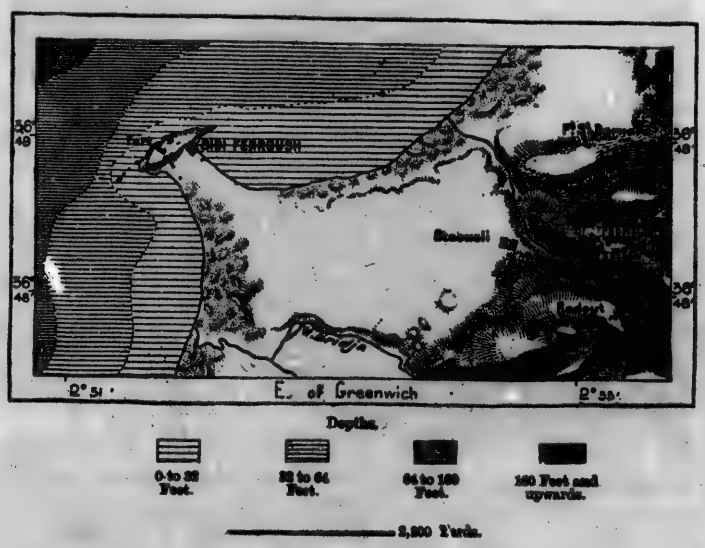
that date from the Mohammedan period. But of these but few have survived. Of the mosques, numbering over one hundred and sixty, not more than twenty now remain, including the graceful mosque of Abd-er-Rahman Et-Tsalbi, whose elegant minaret rises above the foliage of the Marengo gardens near the Bab-el-

Wed. Some fine Moorish houses, all constructed on a uniform plan, have been preserved in the lower part of the Arab quarter; but even these have in some cases lost their characteristic features, being now arranged and fitted up European fashion. One of the most picturesque Moorish buildings is the public monument containing the library of thirty thousand volumes, and the valuable collections of the archæological and historical museum. Amongst these are a Venus, a Neptune from Sherahell, and the gruesome plaster casting of a prisoner immured alive in the walls of a fortress.

From the material standpoint, Algiers, which has already undergone so many changes, urgently calls for still further modifications, such as the removal of the coast batteries preventing its natural development north and south, and the

Fig. 106.—Sidi-Ferruch.

Scale 1 : 75,000.




military lines, forming a zone of over 370 acres, which hem it in on all sides. As a military stronghold, Algiers has lost most of its importance under the altered conditions of modern warfare. The proper site of forts intended to defend the city is clearly indicated by the crests of the hills on the coast. There is further need of an abundant supply of good water; the streets also require to be properly paved in order to abate the dust nuisance, and the drainage works should forthwith be completed, in order to get rid of a still more offensive and dangerous nuisance.

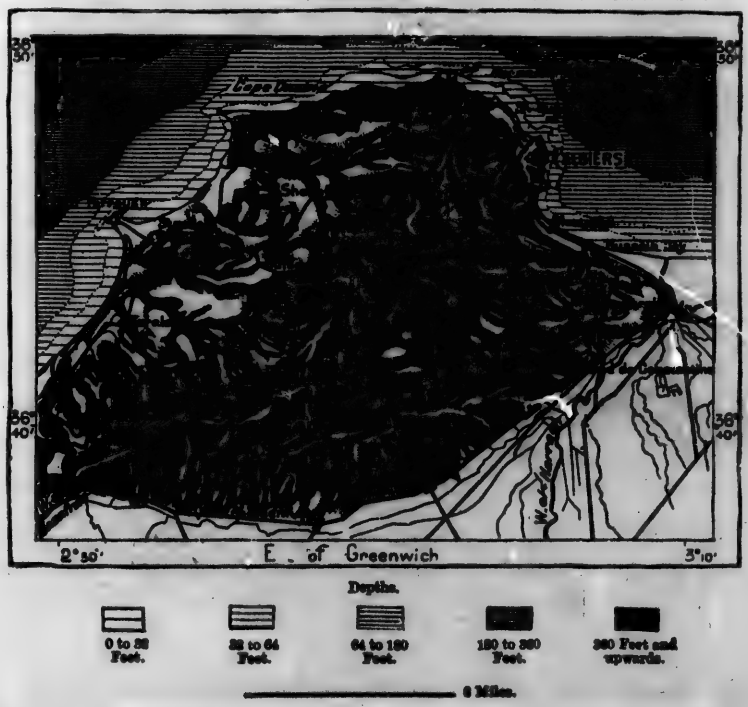
The port itself remains to be finished, in its present state being inferior to many artificial harbours in the Mediterranean, although the piers already con-

structed enclose a basin some 230 acres in extent. This space, however, is not yet sufficiently sheltered from the north-east winds, during the prevalence of which large vessels occasionally break from their moorings. To obviate this danger it is proposed to divide the basin into two parts by means of another pier connecting the islet of Algefna with the mainland.

As a port of call, Algiers is much frequented by the French navy, and periodically by a large number of steamers plying in the Mediterranean waters, although a daily service has not yet been established with any of the French seaports. The local fisheries are very productive, but owing to the defective communications with

Fig. 107.—Algerian Sahel.

Scale 1 : 800,000.




the interior the coasting trade is less developed than that of Bougie or Philippeville. The approaches from the west are guarded by the fortified headland of *Sidi-Ferruch* (*Sidi-Fejej*), where the French troops disembarked on June 14, 1830, and where the first skirmishes with the Dey's forces were followed five days after by the battle of *Staweli*, which opened the road to Algiers. In the neighbourhood of Staweli are some megalithic remains, and here a flourishing Trappist establishment has brought under cultivation some 3,000 acres of land.

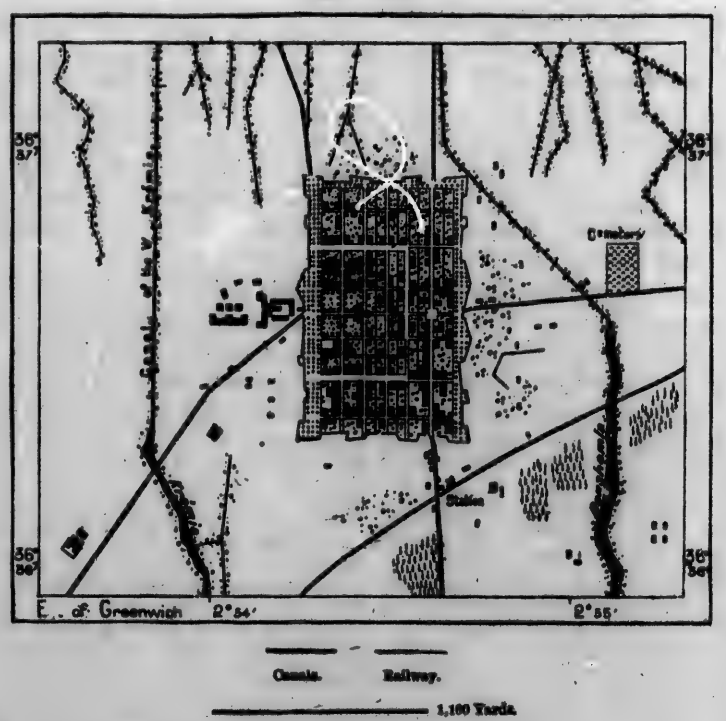
The Sahel, or coast district south and south-west of Algiers, has also been

largely reclaimed. On its highest point stands the health-resort of *La Bouzaréa* (*Bu-Zarea*), whence is commanded an extensive view of land and water. South and south-west stretches the crest of the Sahel, crowned with villas and hamlets. Near *El-Biar* stands the massive Fort de l'Empereur, and farther south lies *Dwéra*, the chief town of the Sahel.

South-east of Algiers, on the route skirting the Sahel, the line of coast villages between *Belcourt* and *Hussein-dey* is interrupted by the *Hamma* plantations, some 200 acres in extent, which were laid out in 1832 for the purpose of studying the

Fig. 108.—Bufarik.

Scale 1 : 28,000.




acclimatisation of useful plants. The experiment has proved most successful, and few other cities, even in tropical climates, can show finer avenues of palms, magnolias, bamboos, and banyans. But an ostrich farm attached to the gardens has not succeeded. Near Hamma the Negroes of Algiers celebrate their annual "bean-feast," at which is sacrificed an ox crowned with chaplets and decked with gay ribbons.

South and west of the capital stretches the vast semicircular plain of the Mitija for a distance of 60 miles, and varying in breadth from 10 to 12 miles. This low-

lying and unhealthy swampy tract has been gradually reclaimed with great labour and risk by the European settlers, and although still partly under scrub, is now on the whole the best cultivated district in Algeria. Beyond *Menerville*, on the route between Great Kabylia and the Mitija, the first large town is *Alma*, and in the neighbouring Hamiz Valley the chief place is *Fonduk*, formerly an important station on the route to the Upper Isser. Fonduk lies 4 miles below the vast barrage which dams up for irrigation purposes some 500,000,000 cubic feet of water, and beyond it the Hamiz enters the district of *Ruiba*, another large village with a departmental school of agriculture. Between the mouth of the river and Cape Matifu are the ruins of the Roman city of *Rusgunia*, which have supplied the materials for many buildings in Algiers.

In the southern district of the Wed Harrash basin the chief places are *Rovigo* and Sidi-Mussa. In a gorge of the Upper Harrash, 5 miles south of Rovigo, are the saline thermal springs of *Hammam Melwan*, frequented by the surrounding Arabs, and even by the Jews and Moors of Algiers. The *Maison-Carrée*, so named from a Turkish barracks now used as a prison, has become the centre of a rapidly increasing population in the same basin, at the point where the railway from Algiers branches off eastwards to Constantine, and westwards to Oran. Like *Hussein-dey*, it may be regarded as an industrial suburb of the capital, from which it is distant about 6 miles.

A slight eminence in the centre of the Mitija plain is occupied by *Bufarik*, whose market has from remote times been frequented by the surrounding Arab tribes. Its fairs are still visited by thousands of natives, with whom are now associated the European settlers, whose patient industry has gradually converted this malarious swampy district into a fertile garden. A few miles to the east is *Shebli*, noted for its excellent tobacco.

### Blida—Kolea—Tipaza.

*Blida*, the chief town in the Mitija basin, although an ancient place, is first mentioned in Mediæval times, when it appears to have borne the name of Mitija, like the plain whose southern section it commands. Under the Turkish rule it became a retreat for the wealthy inhabitants of Algiers; but in the earthquake of 1825 its buildings were overthrown, and half the population buried under the ruins. Then came the sieges and assaults attending the French conquest, reducing it to a heap of ruins when finally occupied in 1839. Hence the new town presents a thoroughly European aspect, preserving scarcely a single mosque and a few Arab houses of the former epoch. Of all Algerian towns it abounds most in orange groves, the mandarine variety of which is famous throughout the world. Thanks to the abundant waters of the Wed-el-Kebir, flowing from the Beni-Salah hills, it also possesses some mills and factories. Blida will soon become the starting-point of a railway, which penetrates southwards into the Shiffa valley in the direction of Laghwat.

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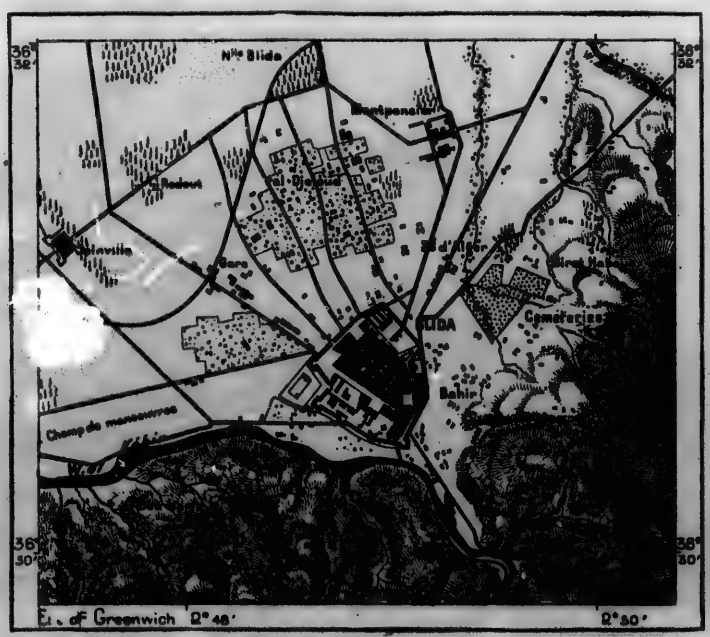
GENERAL VIEW OF MEDEA.

The Shiffa, which, after receiving the Wed-el-Kebir of Blida, unites with the Wed Jer to form the Masafran, has its source towards the south, amid the hills commanded by the town of *Medea*. Beyond *El-Afroun*, the Oran railway leaving the plain enters the narrow valley of the Wed Jer, through which it rises to the ridge separating the Masafran from the Shiffa basin. North of the railway are situated the famous springs of *Hammam-Righa* (*Rirha*), the most frequented in Algeria. Even during the Roman period these *Aquæ Calidæ* were a general resort for invalids and the wealthy classes, as attested by the inscriptions and sculptures discovered in the district. At present a splendid establishment, surrounded by

Fig. 109.—Blida.
Scale 1 : 46,000.




gardens and plantations, stands in the neighbourhood of the springs, at an altitude of 2,000 feet above sea-level.

North of the Mitija, the Lower Masafran basin is commanded by the town of *Kolea*, which during the first period of the conquest possessed great strategical importance as an advanced outpost beyond the Algerian Sahel. The Moors of Kolea, at present far less numerous than the French and other foreign settlers, are of Andalusian origin, having founded this place about the middle of the sixteenth century. On the highest point of the neighbouring hills stands the ancient tomb of Kobr-er-Rumia, or "Tomb of the Christian Lady," a cylindrical mass with a

peristyle of sixty columns, and surrounded by a graded cone over 100 feet high, which was probably surmounted by a statue. This monument has been identified with that mentioned by Pomponius Mela as the common mausoleum of a royal family, probably that of Scylax.

At the western extremity of the Mitija stands the picturesque village of *Marengo*, one of the chief agricultural centres of the whole district. Its fertile fields and gardens are irrigated by an artificial lake on the Wed Meurad, formed by a dam which retains about 70,000,000 cubic feet, with a discharge of nearly 100 gallons per second. Below Marengo the Wed Meurad, after its junction with the Wed Burkika, is known as the Nador, which penetrates a gorge overlooked by the escarpments of the Shenwa, and reaches the coast near the little port of *Tipasa*.

Fig. 110.—Tomb of the Christian Lady.

This place has succeeded an ancient Roman city, which has been partly submerged either by subsidence of the ground, or by some phenomenon of local erosion. Burkika itself is a name of fatal memory, this district having proved the grave of many unhappy exiles banished during the first years of the Second Empire. The true name of the river, written Wed Meurad in the French official nomenclature, would appear to be Wed-el-Mordh, or the "River of Maladies."

## Shershell—Tenes—Boghari.

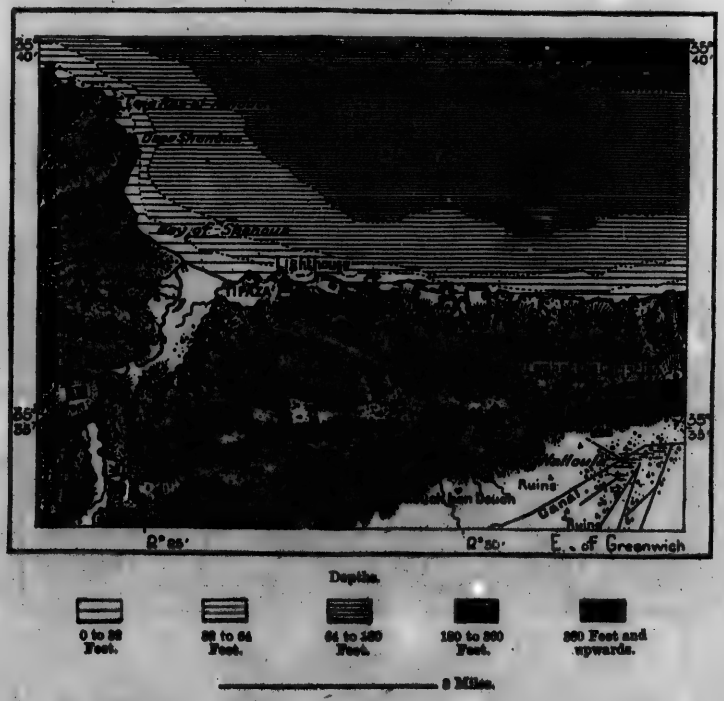
The almost isolated Dahra uplands, skirted on the south by the valley of the Shelif, and connected with the rest of the northern highlands by the low sill under

which passes the Algiers-Oran railway, contain only four towns, two of which, Shershell and Tenes, lie on the coast, and a third, Miliana, on a headland overlooking the Shelif Valley. Nor are there many French settlements in a district from which the colonists are repelled by the rugged character of the soil and the deficient supply of water.

*Shershell*, lying west of the Shenwa heights, is one of the old cities of Algeria. Twice restored, by the Andalusian Moors and again by the French, it appears at the dawn of history under the Punic appellation of *Ioi*. But its fame dates from

Fig. 111.—Isthmus of Tipasa.

Scale 1 : 150,000.

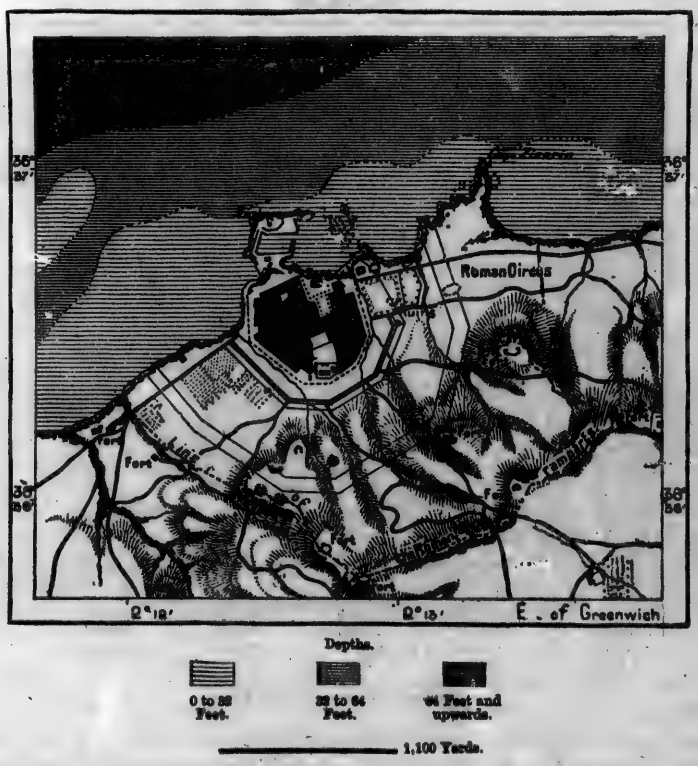



the Roman epoch, when Juba the Younger made it the capital of his kingdom, and gave it the name of *Cæsarea*, which it still retains under the greatly modified form of Shershell. This "most splendid colony of Cæsarea" has left numerous monuments, notably the thermal baths, where was found the beautiful statue known as the "Venus of Shershell," now removed to the museum of Algiers. In 1840, when the modern French town was built on the old ruins, a perfectly preserved hippodrome was discovered, which has since become a mere depression in the ground, the materials having been carried off for building purposes.

Standing between two columns on the route to *Zurich* are still visible the superb remains of a triple-arched aqueduct, which supplied several extensive cisterns, and which is the only monument of the Roman epoch that has been restored. Shershell also possesses a small museum, the most interesting object in which is the fragment of an Egyptian statue. The port, about 5 acres in extent, is formed by a cirque protected from the north-west winds by the islet of Joinville. But it is exposed to the dangerous north winds, during the prevalence of which it is inaccessible to shipping.

Fig. 112.—Shershell.

Scale 1 : 35,000.




West of Shershell follow the modern settlements of *Novi* and *Guraïa*, and the ruins of the ancient *Gunugis*, the latter occupying near the mouth of the Wed Dahmus a much better position as a seaport than the neighbouring *Tenes*. This place, lying almost in the centre of the Dahra coast between Tipasa and Mostaganem, owes its relative importance rather to the iron, copper, lead, and silver mines of the surrounding district. Successor of the Roman *Cartenna* (or *Car Tenna*, that is "Cape Tenna," in Berber), it consists of two quarters, the old town

probably occupying the site of the old Phœnician settlement, and Tenes, properly so called, standing half a mile farther down at the mouth of the Wed Allala. Its port, lying to the north-east, forms an artificial basin 60 acres in extent, well sheltered, but inaccessible in rough weather.

Fig. 113.—Tenes.
Scale 1 : 20,000.

The inhabitants of the Dahra uplands are mostly of Berber origin, and some of the tribes, such as the Zeriffas and Ashashas, who live near the coast to the south-west of Tenes, till recently spoke a dialect akin to that of the Kabyles. But elsewhere the speech and customs of the Arabs have long prevailed, and most of

the tribes live in tents, their love of trees alone betraying their Berber blood. In the centre of the district is the pleasant little town of *Mazuna*, which lies in a charming valley watered by streams flowing to the Shelif. Mazuna is the birthplace of Mohammed Ben Ali-es-Senûsi, founder of the powerful order which everywhere preaches a return to the pure teachings of Islam, and hatred of Turk and Christian alike. Farther west, the heights of Nekmaria are crowned with an

Fig. 114.—Gorges of the Shelif.

Scale 1 : 100,000.

old fort, beneath which are the stalactite caves of unhappy memory, where, in 1845, Pelissier caused the Uled-Riah tribe to be smoked to death.

Below its confluence with the Nahr Wassel, the Shelif leaves the region of plateaux, penetrating through the gorges of the Atlas down to the longitudinal valley which separates the Dahra from the Warsenis uplands. Near the entrance of the defile stands the village of *Boghari* (Bukrari), a future station on the projected railway between Algiers and Laghwat. On the crest of the neigh-

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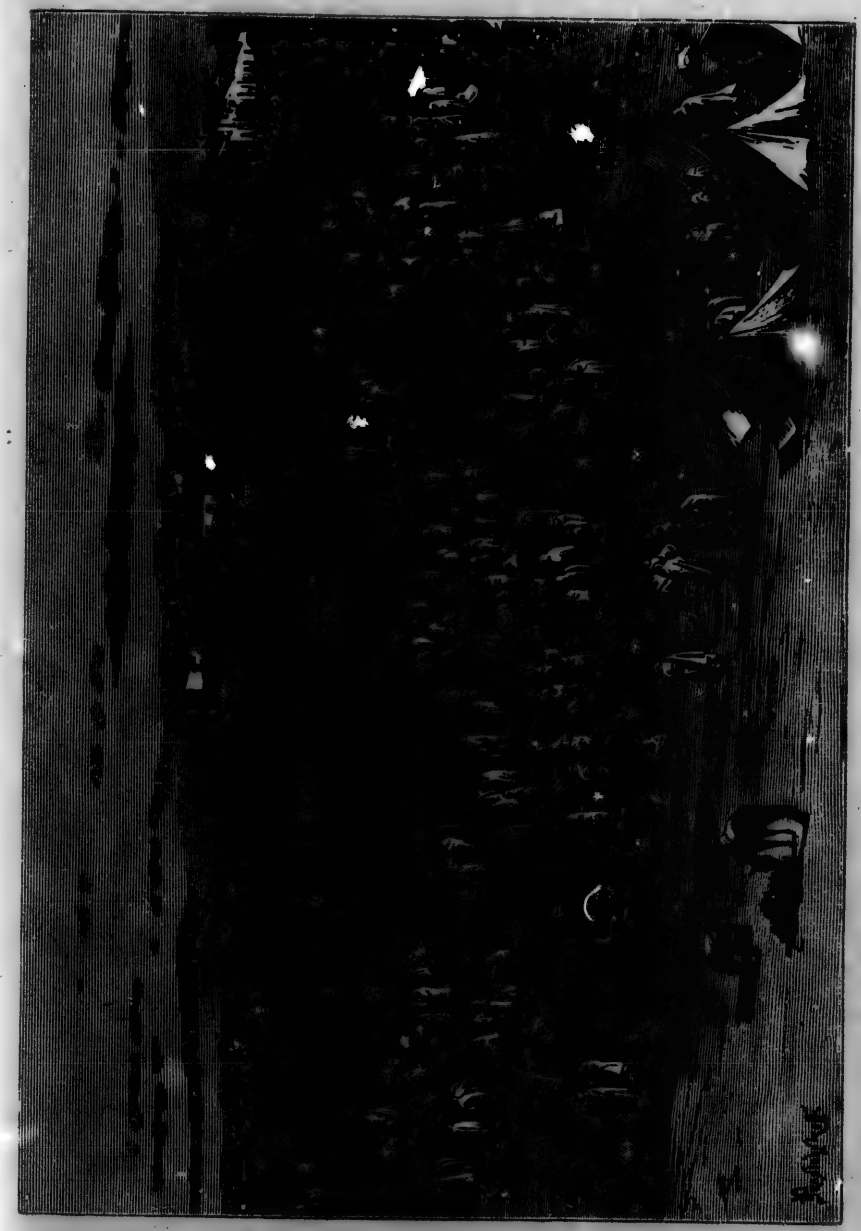


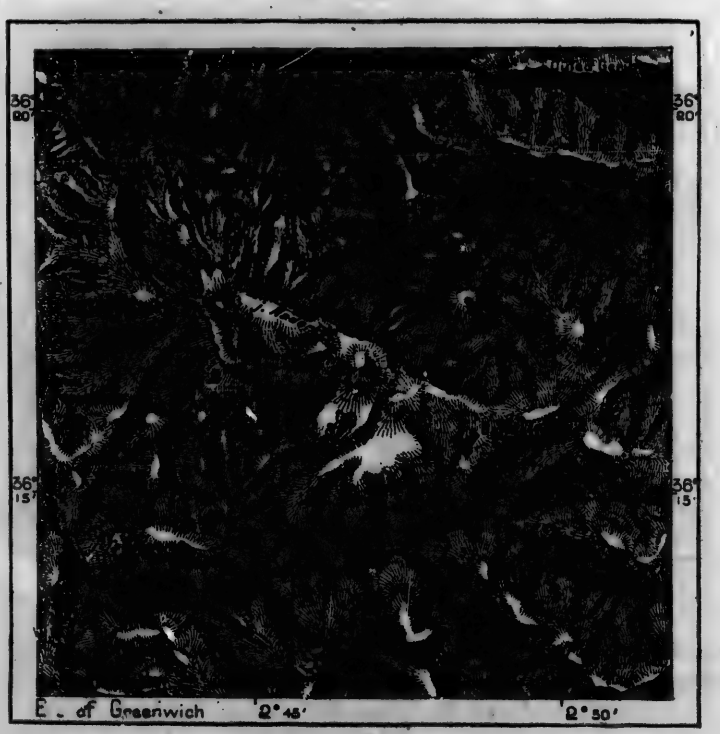
BOKHARIAN VILLAGE AND MARKET.

bouring hill the Mzabites have erected a *Ksar*, as a fortified depôt for the alfa, cereals, wool, and other produce of the plateau. North-west of this market a bluff 3,300 feet high is occupied by the entrenched camp of *Boghar*, or *Bughar*, that is, the Cave, constructed in 1839 by Abd-el-Kader to command the gorges of the Shelif, and reduced by the French in 1841. From the citadel the view stretches across the southern steppes separated by the Jebel Amur from the boundless solitudes of the Sahara.

### Medea—Mostaganem—Matamore.

*Medea*, the *Midia* or *Lemdia* of the Arabs, occupies in the Shelif basin one of

Fig. 116.—Medea.
Scale 1 : 150,000.




the highest points of the highlands skirting the northern side of the Mitija plain. It stands at an altitude of over 3,000 feet, near the southern foot of Mount Nador (3,470 feet), whence are visible the crests of all the surrounding heights from the Warsenis to the Jurjura highlands. Medea, former capital of the Titteri district,

was one of the most fiercely contested towns in Algeria during the first period of the conquest. Here is a remarkable two-arched aqueduct; but few other remains have been found of the Roman city which has been replaced by the modern town. The district yields excellent corn, wine, and vegetables.

After receiving the streams flowing from the Medea and Jendel hills, the Shelif sweeps by the eminence occupied by *Amura*, the "Fortunate," successor of the Roman Sufasar. Beyond this point it trends westwards, and near *Lavarande* enters the broad low-lying plain traversed by the railway between Algiers and Oran. North-east of Lavarande the nearly horizontal terrace of Zakkar-el-Gharbi is

Fig. 116.—Miliana, Seat of Affreville.

Scale 1 : 150,000.

occupied by the town of *Miliana*, at an altitude of 2,460 feet. From this commanding position a view is afforded of the vast amphitheatre of blue hills stretching beyond the sharp peaks of the Warsenis. The present town, rebuilt by the French, preserves no remains of the Roman *Malliana*, and very few of the more recent Arab buildings. The neighbouring vineyards yield a highly esteemed wine.

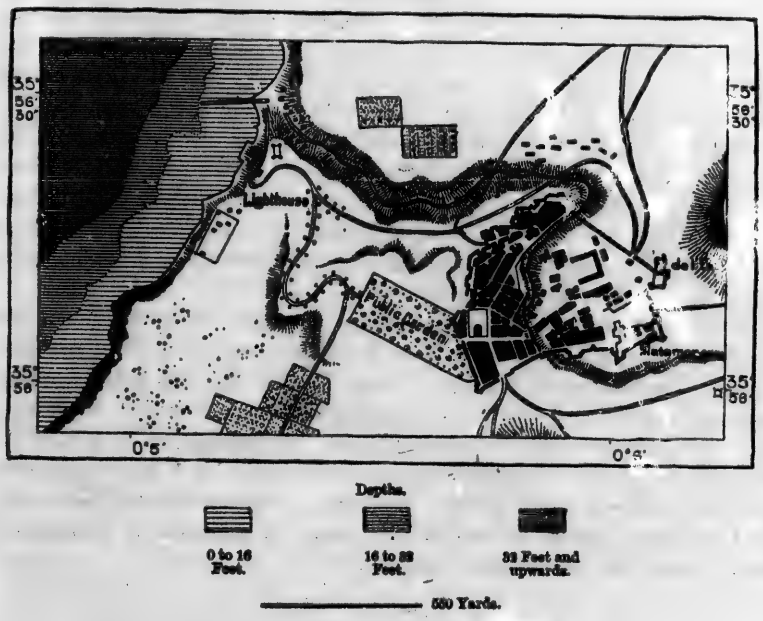
West of *Affreville* and Lavarande in the Shelif Valley follow several populous villages, such as *Duperré* and *Saint-Cyprien des Attaf*, the latter noteworthy as the only Arab community converted to Catholicism. Its members, however, are exclusively orphans or foundlings rescued during the famine of 1867, and brought

up aloof from their kindred. Farther on the railway passes by *Wed Fodda*, some miles below which *Orléansville*, capital of the Lower Shelif Valley, was founded in 1843 on the site of *El-Asnam*. Here stood the church of the *Oppidum Tingitei*, dating from the fourth century, of which a crypt and mosaic pavement still remain.

Near the confluence of the Shelif and Wed Riu stands the large village of *Inkermann*, while the neighbouring Mount Guezzul (3,580 feet) is occupied by *Tiaret* (*Tiharet*, *Tihert*), which in 1843 succeeded as capital of the district to *Takdemt*, or *New Tiaret*, chosen by Abd-el-Kader in 1836 as the central stronghold

Fig. 117.—Mostaganem.

Scale 1 : 20,000.




of his kingdom, and destroyed by the French in 1841. South-west of the two Tiarets, and in the same basin of the Mina, lies the Berber town of Frenda, east of which three northern spurs of the Jebel Akhdar, or "Green Hills," are surmounted by the so-called *jedars*, quadrangular structures some 60 feet high, terminating above in step pyramids. On the neighbouring cliffs are some prehistoric sculptures and colossal dolmens, one of whose blocks is said to be no less than 150 feet long.

Tiaret will soon be connected, by a railway already in progress, with the ancient town of *Mostaganem*, which stands near the coast on a cliff over 300 feet high, divided by a ravine into two quarters. To the east is the military town of

*Matamore*, to the west Mostaganem proper, which has been almost entirely rebuilt in the European style. During the sway of Kheir-ed-Din in the sixteenth century Mostaganem was one of the great cities of Algeria, and before the opening of the Algiers-Oran railway it formed the commercial centre of the Shelif basin. At present it has fallen to the position of a secondary town with an exposed roadstead, and without railway communication with the interior. South and west are some populous villages, of which the largest is *Abukir*, and the most celebrated *Mazagran*, memorable for the gallant defence of its small French garrison in 1840.

Near the source of the river Makta lies the modern town of *Saida*, which is the central station of the railway running from Arzeu across the plateaux, beyond the region of the shotts, in the direction of the southern wastes. Some six miles farther south is the large village of *Ain-el-Hajar*, a centre of the alfa industry, peopled almost exclusively by Spaniards. On a southern terrace of the Beni-Shugran uplands stands *Mascara*, or the "permanent camp," a former capital of Algeria, and at present one of the chief towns of an arrondissement in the province of Oran. As a commercial and agricultural centre Mascara still enjoys considerable importance. About 12 miles to the south-west are the mineral waters of *Bu-Hanefia*, known to the Romans under the name of *Aquæ Sirenses*. In the Mascara district prehistoric monuments, as well as the remains of large extinct animal species, are numerous. Here were found the skeletons of the *elephas atlanticus*, and of a variety of the camel, showing that this animal, which was not found in Mauritania during the early historic period, formed part of the local fauna at an older geological epoch.

*Perrégaux*, which marks the spot where the Algiers-Oran and Arzeu-Saida railways cross each other, enjoys some importance as a depôt for agricultural produce. The district is watered by canals derived from the Habra, in whose valley has been constructed the largest artificial lake in Algeria, containing at times some 1,400,000,000 cubic feet of water. Its barrage, which is 1,480 feet long and 110 feet high, and which has occasionally given way, was constructed by a financial company which farms a domain of 65,000 acres in the Macta valley below the Habra and Sig confluence. The centre of this estate is *Débrousseville*, which is surrounded by extensive vineyards.

## Arzeu—Oran.

Notwithstanding its Arab name, *Sidi bel Abbes*, on the banks of the Mekerra (Sig), is quite a modern place, dating only from the year 1845. It is the capital of an arrondissement and one of the most charming and flourishing towns in Algeria. North of it and on the same river lies the new town of Saint-Denis, in the centre of a rich and well-cultivated district. Beyond this point the Macta, formed by the junction of the Sig and Habra, reaches the coast near the little harbour of *Port aux Poules*, north-west of which is the flourishing seaport of *Arzeu*, one of the best havens on the exposed Algerian seaboard. Occupying the site of

the Roman *Portus Magnus*, Arzeu has of late years acquired fresh importance as the terminus of the railway which taps the alfa districts of the upland plateaux. Besides alfa, it exports salt, chlorine, soda, and other chemicals, either collected or

Fig. 116.—Arzeu.

Scale 1 : 80,000.

manufactured on the banks of the saline Lake El-Melah, in which basin about two million tons of salt are yearly deposited. Some Roman ruins are scattered along the beach, at one spot numerous enough to take the name of "Old Arzeu." In

the neighbourhood the largest places are *Saint-Leu* and *Saint-Cloud*, the latter forming the intermediate station between Arzeu and Oran.

*Oran*, the *Wahran* or *Guharan* of the Arabs and Turks, is the first commercial mart in Algeria, and for a time rivalled Algiers itself in wealth and population. Founded at the beginning of the tenth century by the Andalusian Moors, it soon acquired importance, thanks to the neighbouring harbour of *Mers-el-Kebir*, or the "Great Port," sheltered by the Jebel Santon headland from the dangerous north and north-west winds. This harbour of refuge, the *Portus Divinus* of the Romans,

Fig. 119.—Oran.

Scale 1 : 80,000.

is encircled by steep cliffs, affording no space for a large town. Hence Oran lies at the extremity of the bay, where the hills disappear, leaving a wide opening landwards. From the strategic point of view this breach also offers great advantages, being defended by a natural fortress, adding greatly to the strength of the enclosures.

After a Spanish occupation of nearly three hundred years, Oran fell into the hands of the Turks in 1708. The Spaniards, returning in 1732, were not finally

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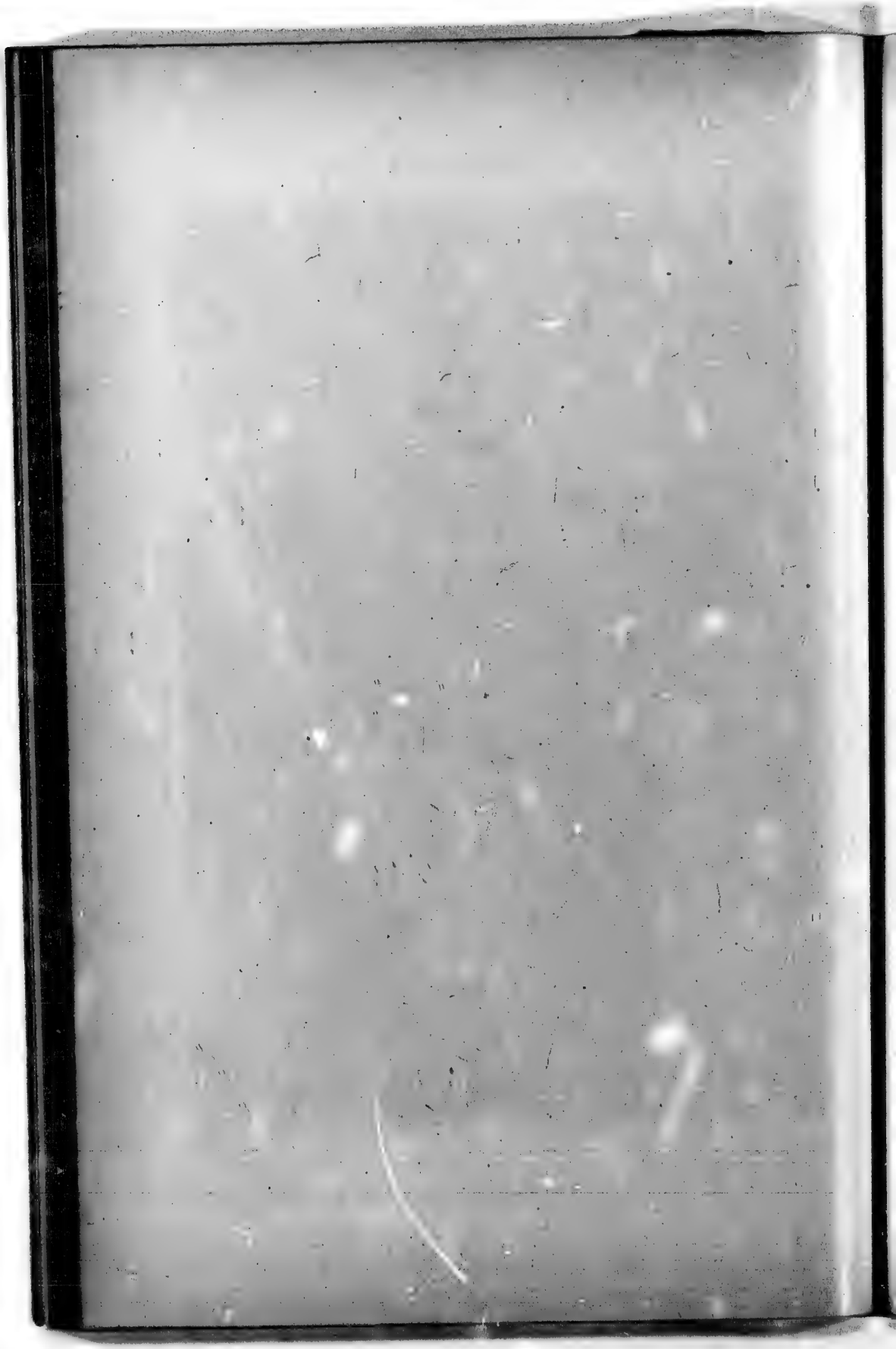
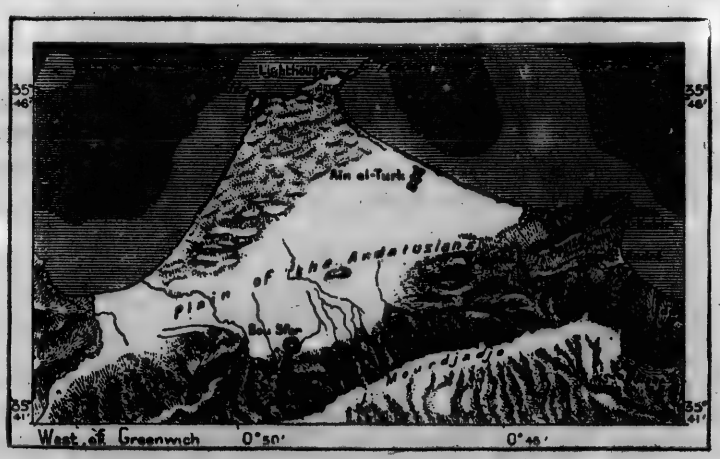
ORAN.—VIEW TAKEN FROM THE MARINA.



expelled till 1792, two years after the place had been ruined by an earthquake and a fire. Since its occupation by the French in 1831, the Spanish defensive works have been restored, and Oran rendered almost impregnable, at an enormous expenditure of labour and money. At present it covers a space at least five times more extensive than the old town, whose three thousand inhabitants were crowded in between the amphitheatre of hills and the headland commanded by the now useless fortifications of the Château-Neuf. Here the Ain-Ruina ravine has been filled in to connect the western quarters with those of the *Karguenta* suburb, stretching away in the direction of Arzeu. The chief public buildings are grouped

Fig. 130.—Plain of the Andalusians.

Scale 1 : 180,000.




towards the centre of the town, on the intermediate terrace separating the marina from the railway station.

In Oran the French, including the naturalised Jews, are still exceeded in number by the Spaniards, who monopolise some of the local industries. The Mussulmans, who form a very small minority of diverse origin, are mostly confined to the southern district of *Jahli*, commonly known as the "Black Village." But whatever their nationality or religion, the inhabitants are almost exclusively occupied with trade, although science and letters are represented by the most important geographical and archæological society in Algeria, besides a library and small museum occupying a part of the town hall. Here alfa grass, mineral

ores, and corn are shipped in exchange for European wares. A pier over half a mile long, which springs from the foot of Fort Lamoune (La Moune, Mona), advances to depths of 65 feet, enclosing a space of about 60 acres, divided by secondary piers into secondary basins, which afford sufficient accommodation for the largest vessels. The great advantage of the port of Oran is its proximity to Spain, being only 120 miles, or eight hours by steam from Carthagena. Its total yearly trade, which has doubled during the last ten years, now exceeds 1,230,000 tons, exclusive of the local fisheries, valued at about £30,000.

West of the Jebel Santon stretches the so-called Plain of the Andalusians, a triangular tract terminating northwards at Cape Falcon, and laid out in vineyards dotted over with pleasant hamlets. It takes its name from the Andalusian Moors, who after their expulsion from Spain settled here in large numbers. Four miles south of this point the unfinished railway branching off from the main line to Algiers in the direction of Morocco passes by *Misserghin*, one of the chief agricultural centres of the department. Near the neighbouring sebkha, which has already been partly drained, follow at short intervals the towns of *Bu-Tlelis*, *Lurmel* and *Er-Rahel*, and beyond the Rio Salado, but still in the same basin, *Ain-Temushent*, the *Timici* of the Romans, on a high cliff in a rich mineral district. South of this place are the famous onyx mines of *Ain-Tekbalek*, already known to the Romans, and still the richest in the province.

## Tlemcen—Nemoura.

In the basin of the Upper Isser, an eastern branch of the Tafna, the chief commune is that of *Lamoricière*, a future station of the railway intended to connect Oran with *Tlemcen* through Sidi-bel-Abbes. Tlemcen, on a small affluent of the Isser, at the northern foot of a rocky eminence over 2,600 feet high, ranks fifth for population and first for historic memories of all the Algerian towns. It is pleasantly situated on a terrace planted with fruit-trees of all sorts, whence the Roman colony took the name of *Pomaria*. But the Roman settlement lay more to the south-east, where are still visible the remains of *Agadir*, or the "Ramparts." Its materials served as a quarry to build the western town of *Tagrart*, now known as Tlemcen, which became the metropolis of the great Zenata Berber confederation. Frequently besieged, stormed, wasted with hunger and the sword, it nevertheless rose to great power during the fifteenth century, when it was said to contain twenty-five thousand families.

At that flourishing epoch it rivalled the great European cities as a centre of trade, the industries, wealth, the arts and sciences; like Cordova, Seville, and Grenada, it furnished a fresh proof of the high degree of culture to which the Berber race is capable of attaining. The minarets and cupolas of its mosques, its carvings and mural arabesques perpetuate the renown of the Zenata artists, while the chronicles record the artistic marvels displayed at the Court of Tlemcen.

Here long resided Ibn-Khaldun, the famous author of the "History of the Berbers."

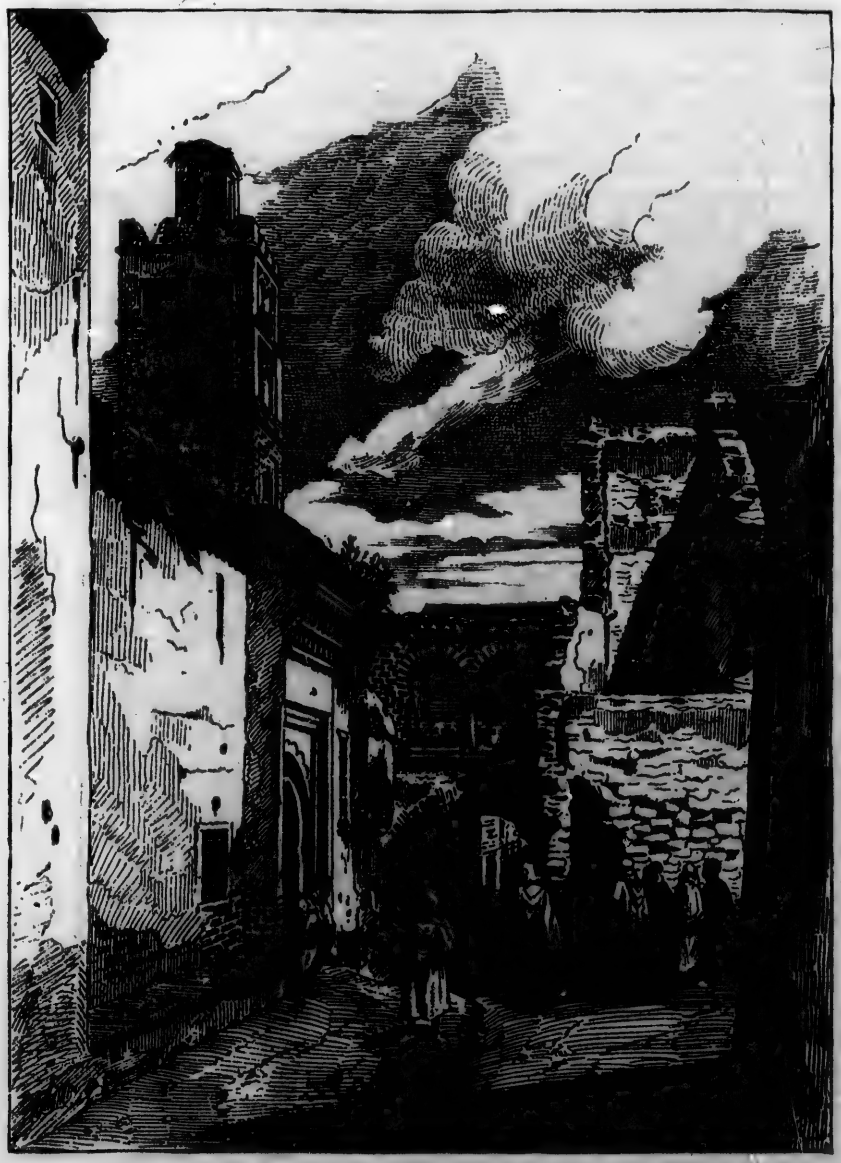
Tlemcen passed from the Spaniards to the Turks in 1553, when most of the inhabitants emigrated to Morocco; and after its occupation by the French in 1842

Fig. 121.—Tlemcen.
Scale 1 : 125,000.

it was mostly rebuilt in the European style, with regular streets and squares, uniform military and municipal buildings. But what remains of the old town is still distinguished for its picturesque appearance, quaint Moorish houses, and

handsome Berber mosques. Amongst its architectural curiosities are the nave of

Fig. 122.—Street View in Tlemcen.



the Great Mosque, supported on seventy-two columns, and especially that of Abu-'l-Hassan, disposed in three sections supported on onyx columns. One of the

inscriptions collected in the museum is the epitaph on the tomb of Boabdil, last king of Grenada, who died here, and not, as traditionally supposed, in Morocco.

At *El-Eubbad*, over a mile to the south-east of Tlemcen, stands the famous kubba

Fig. 123.—Mouth of the Tafna.

Scale 1 : 25,000.

of Sidi Bu-Medin, the learned Andalusian Moor, who taught at Bagdad and in Spain during the twelfth century. Other historic monuments of some interest are

found at *Mansura*, 2 miles to the south-west, including a graceful minaret over 130 feet high, half of which, built, according to the local legend, by Christian hands, has become detached longitudinally, leaving the portion erected by the faithful intact.

The European settlement of *Remchi*, conveniently situated below the confluence of the Isser and Tafna, forms the chief station between Tlemcen and its natural outport, *Beni-Saf*, which, notwithstanding a badly protected harbour, does an active

Fig. 124.—Nemours.

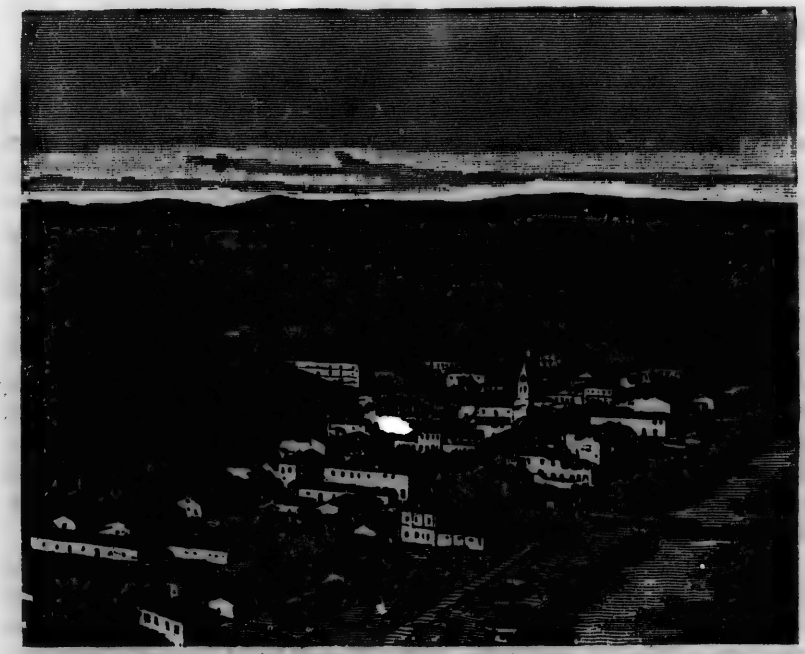
Scale 1 : 40,000.

export trade, especially in the excellent iron ores worked by over one thousand miners in the neighbouring metalliferous district. Over a mile from the mouth of the Tafna lies the island of Rashgun, the Arshgul of the Arabs, which affords a shelter to the approaches of the river. Near the lighthouse at the north end of the island are the ruins of an Arab town, and other remains are strewn over the whole seaboard. North-east of Beni-Saf stand the vestiges of the Roman port of

*Camarata*. South of Rashgun are the scattered stones of *Takebrit*, or the "Vaults," occupying the site of the ancient *Siga*, and to the west the fragments of an ancient enclosure not far from Cape Honein, a name transformed by seafarers into that of Noah. At this point, overlooked by the escarpments of the Jebel Tajara, stood the important Arab town of *Honein*, one of the outports of Tlemcen before the conquest of Oran by the Spaniards.

Between the Tafna and the Marocco frontier the modern French seaport of *Nemours* occupies the site of the Arab town of *Jemda-el-Ghazawat* (*Razawat*), the

Fig. 125.—Nemours.



Roman *Ad Fratres*. This Latin name is explained by the two rocks, still known as the "Two Brothers," which lie off the coast to the west; while the Arabic appellation of the "Corsairs' Mosque" recalls the time when this creek was a nest of pirates. East of the city rises the bluff on which stood the corsairs' stronghold and mosque. The port is not sufficiently sheltered to give access at all times to the steamers and sailing-vessels which place Nemours in direct communication with Oran and with the Spanish ports of Melilla on the Marocco coast, and Almeria and Malaga on the opposite Andalusian seaboard. Like the Berber town of *Nedroma*, lying 14 miles to the south, it is surrounded by hills, which abound in rich iron, manganese, and other mineral ores. Near the kubba of *Sidi-Brahim*, to the

south-west, the Arab war of independence was brought to a close by the surrender of Abd-el-Kader in 1847.

Compared with the coastlands and uplands of the Tell, the southern plateaux and regions draining to the Sahara are very sparsely peopled, the Arab and Berber tribes here occupying vast spaces out of all proportion to their numbers, while the French settlers, exclusive of the naturalised Jews, numbered scarcely five thousand altogether in 1881. Yet the ruins of Roman towns and farmsteads in the upland valleys of the Aures and other districts show that many of these extensive tracts enjoy a soil and climate highly favourable to European civilisation.

## Aures—Batna.

The Aures, or Auras, properly so called—that is, the "Cedar Mountains," according to some etymologists—is comprised between the course of the Wed-el-Kantara and that of the Wed-el-Arab, and is inhabited exclusively by peoples of Berber speech, but of diverse origin. Although there has evidently been much displacement of populations since the Roman epoch, the country was never occupied by the Turks nor reduced by the French till the year 1845. Yet the latter are already regarded as the descendants of the "Rumân," or old Roman colonists, and the inscriptions and other local monuments constitute in the eyes of the natives their most legitimate title to the possession of Algeria. "The Rumi, sons of the Rumân, have only resumed the patrimony of their fathers." To these are attributed all the ruins of the land, and especially the circular graves still scattered in hundreds over the uplands of the Mons Aurasius. Roman blood probably betrays itself in the prevalent fair type, and some of the most important tribes even as far south as the Saharian oases still bear the name of Rumâniya. The current Berber dialect retains many Latin terms, such as the names of the months, *bignu* (from *pinus*?), the cedar-tree, *bu ini* (*bonus annus*), the salutation at the New Year, and others.

Although traditionally converted to Islam by a certain "Saint" Sidi Abdullah, before the French occupation most of the natives were Mohammedans only in name. But Arabic having been adopted as the official language, both the Arab speech and religion have since been widely diffused amongst these Berber highlanders. The indigenous dialects, Zenatia in the eastern, Tmazirt (Temâzirha) in the western districts, often take the general name of Teshawit (vulgarly Shawia), from the Arabic Shâwi, "Shepherds," and this term is even collectively applied to all the Algerian Berbers, except the Kabyles.

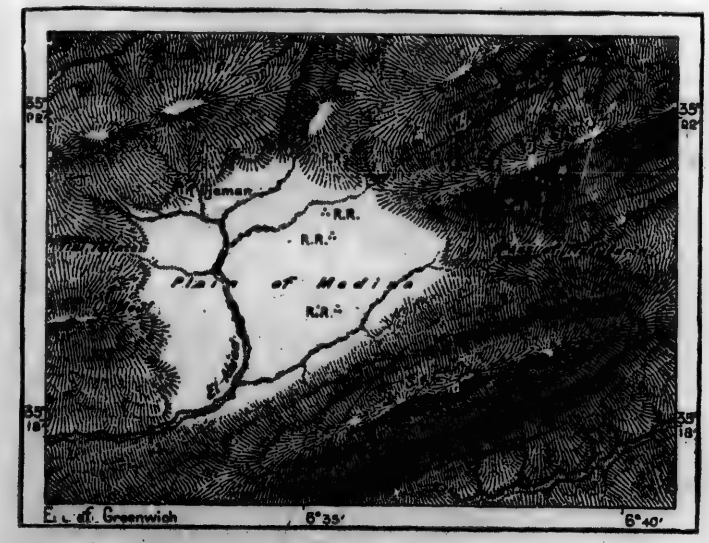
The rising French settlement of *Khenshela*, conveniently situated at the converging point of several fertile valleys, commands the north-eastern Aures district. It occupies the site of the Roman *Mascula*, and numerous ruins are found, especially towards the north in the direction of the old Roman town of *Bagai*. Megalithic monuments, such as graves surrounded by a circle of stones, are also scattered in thousands over this region. *Sidi-Naji*, at the south-eastern extremity of the Aures, in the Wed-el-Arab basin, is noted for its handsome mosque, and in the district

are several influential zawyas (religious communities), such as that of *Khairan* in the Jebel Sheshar, and *Liana* near the old Roman military post of *Bades* (*Ad Badias*).

West of the *Tizugarin* pass stretches the extensive plain which seems destined to become the centre of European colonisation in the Aures, but whose rich pastures are meantime held in common by all the branches of the Ulad-Daud tribe. Here begins the valley of the Wed-el-Abiad, which has a south-westerly course, losing itself in the Sahara below the Tranimin gorges. The nearly parallel Wed Abdi Valley is held by the brave Ulad-Abdi tribe, whose stronghold

Fig. 126.—The Sheliya and Plain of Medina.

Scale 1 : 150,000.




R.R. = Roman ruins.

5 Miles.

of *Nara* was razed by the French in 1850. The present capital of the tribe is *Menaa*, which may be regarded as the central point of the Aures highlands.

*Batna*, commanding the northern districts of this region, is at once an important military station and the chief administrative centre in the southern portion of the province of Constantine. It occupies between the Aures and Tugueur uplands a position analogous to that of Khenshela, lying in a plain which affords direct communication in one direction with the Rummel, in another with the Hodna basin. Here converge all the more important natural routes south

of Constantine; hence the neighbouring *Lambæsis* (*Lambesa*), had been chosen by

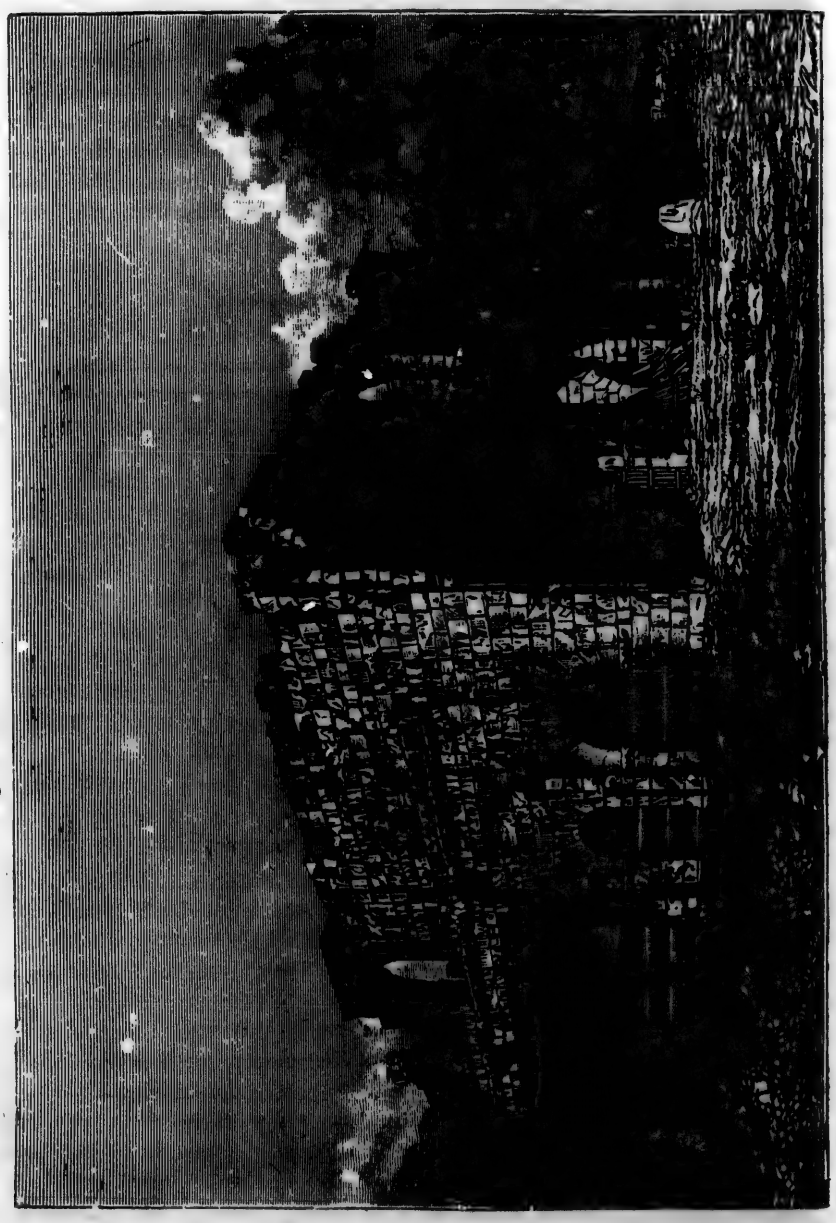


Fig. 127.—Lambesis—Ruins of the Prætorium.

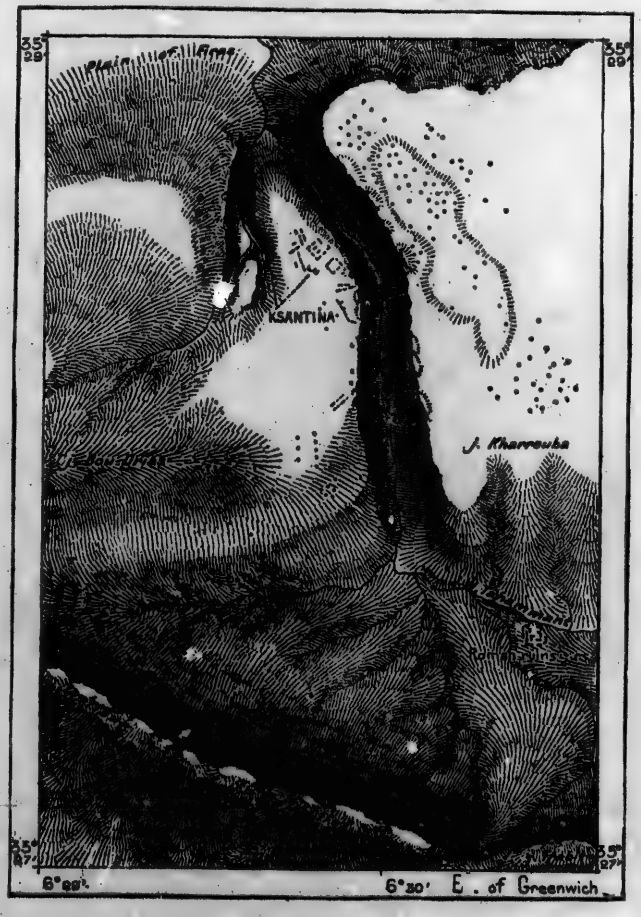
the Romans as the head-quarters of the famous Tertia Augusta legion, and the centre of Numidia Miliciana.

## Lambessa.

The New Lambessis (Nouvelle Lambèse), as Batna was at first officially called, cannot pretend to rival the splendours of the old Lambessis, the *Tuzzut* of the

Fig. 128.—Fum Ksantina.

Scale 1 : 25,000.

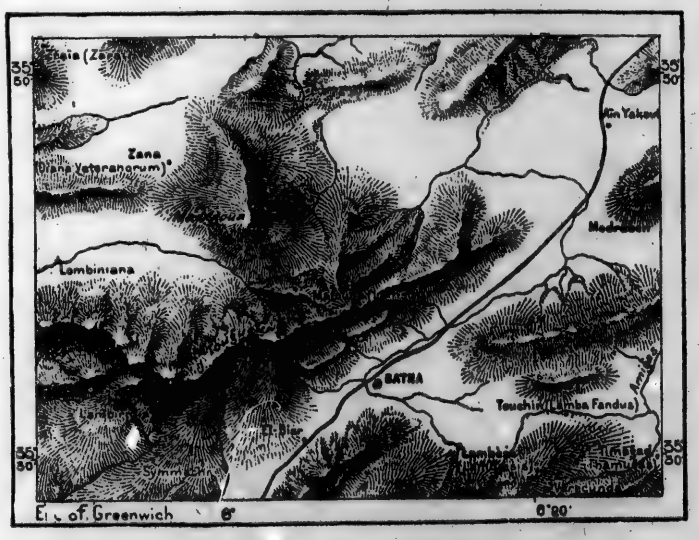



Berbers, which covered an area of several square miles, and whose remarkable ruins are still far from having been thoroughly explored. Here Léon Rénier

alone deciphered over one thousand inscriptions, and the great collection of "Algerian Inscriptions" already contains over fifteen hundred from this place, including some of great historic value. The sites have been determined of two camps, one that of the Third Legion, the best preserved of all in the Roman world. In its centre still stands a large portion of the Prætorium, now converted into a museum. Of the forty triumphal arches seen by Peyssonnel in the last century, when the city was still almost entire, four only are now standing. Most of the other buildings, except the tombs lining the Roman way, have also been demolished to supply materials for the construction of barracks, houses, and prisons.

Fig. 129.—Ancient Roman Towns in North Aurès.

Scale 1 : 600,000.




The henshir of *Timegad*, 12 miles east of Lambessa, is all that remains of the Roman *Thamugas*, which was even a more magnificent place than its neighbour. South of this point the narrow *Fum Ksantina* gorge, separating the plateaux of Bu-Driasen and Kharruba, is crowned with circular tombs, pillars, and the remains of some large buildings. In the Batna district are also many other vestiges of the prehistoric and Roman epochs, the most remarkable of which is the *Medrasen* (*Medghasen*), on the margin of a sebkha 18 miles north-east of Batna, and not far from the *Ain-Yakut* station on the Constantine railway. This is a sepulchral monument in the same style as that of the Christian Lady near Tipasa, consisting of a circular mass, 580 feet round, supporting a cone and surrounded by sixty columns.

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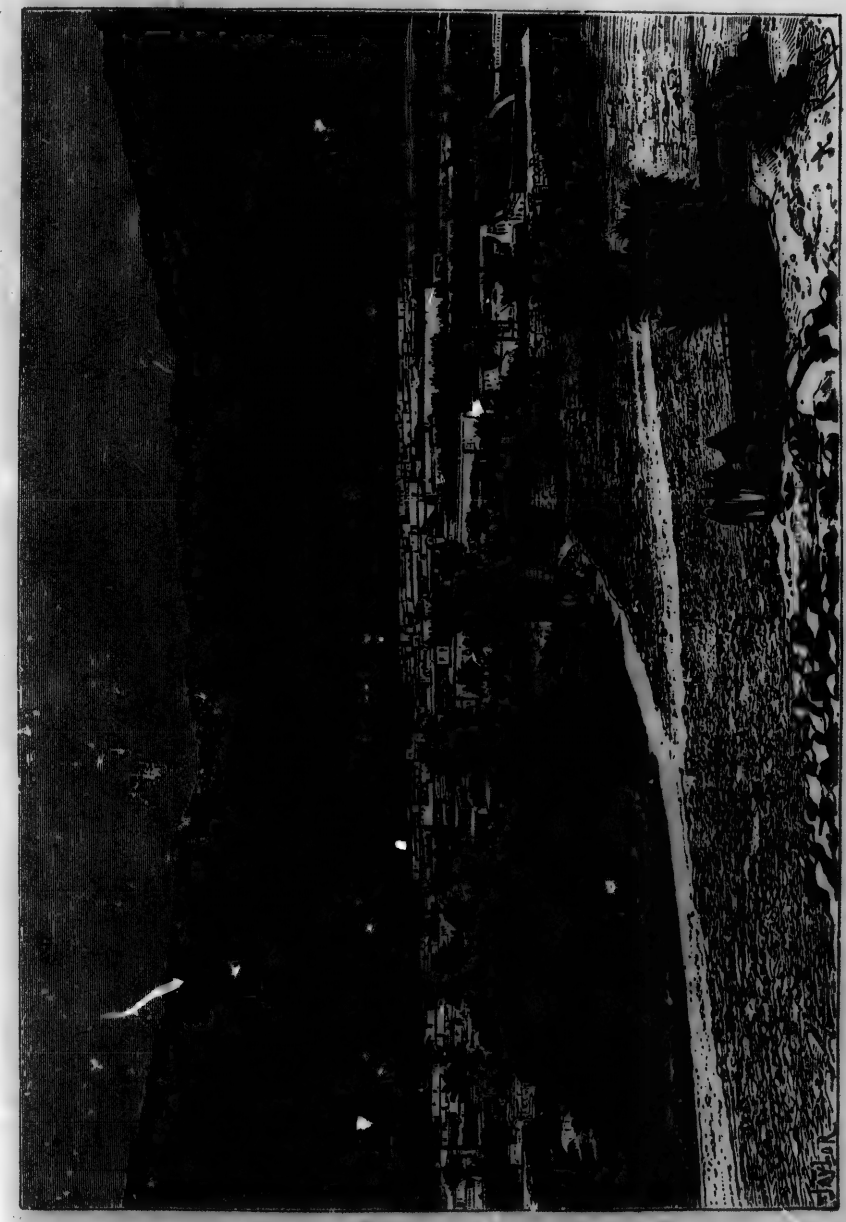


THE EL-KANTARA GORGE.

This was evidently a mausoleum of the Numidian kings, older than that erected by Juba near Iol Cæsarea. In the district are several other conic tombs, but of smaller dimensions. Westwards in the direction of Selif follow several other Roman towns, such as *Diana Veteranorum*, the present *Zana* and *Zarai* (Zraïa), where was found a curious custom-house tariff attesting the former importance of the trade between Mauritania and Sudan.

Fig. 130.—A Nail Arab Woman.

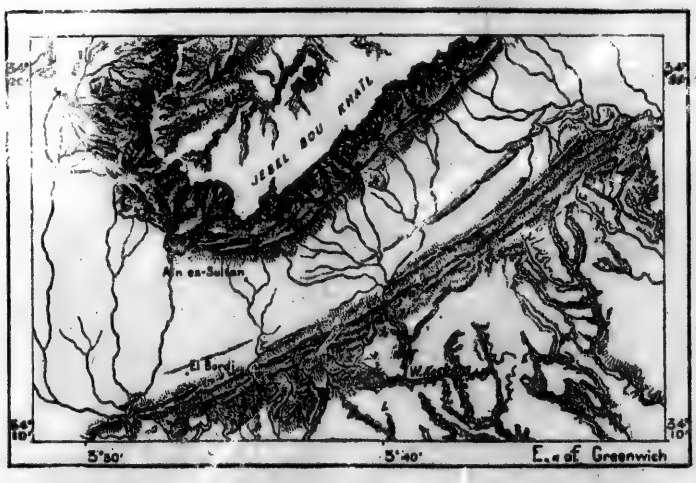
The present capital of the extensive Hodna basin is *Bu-Sâda*, the "Happy Abode," a picturesque place perched on the brow of a hill in the midst of gardens and palm-groves. Since the French occupation in 1849 its trade has been considerably developed, and its commercial relations now extend northwards to the coast towns, southwards to the oases of the Sahara. South of this place the powerful confederation of the Nail Arabs occupies a vast territory, stretching westwards to the Jebel Amur, eastwards to the Zibân district. These Arabs,

whose camping-grounds are recognised by the red-brown colour of their tents, breed camels on the steppes and sheep on the hills, cultivating cereals in the depressions, and elsewhere serving to maintain commercial intercourse between the Sahara and the Tell.

The military port of *Jelfa*, south-west of Bu-Sâda on the route between Algiers and Laghwat, occupies the centre of the Nail territory. Notwithstanding the brackish character of the waters flowing north-west to the Zahrez-el-Gharbi sebkha, the formerly arid slopes in this district have been successfully reclaimed and planted with the Italian poplar and other large trees. These favourable results cannot fail to encourage similar efforts on the part of the European colonists, who have begun to settle in the upland valleys especially of the Jebel

Fig. 131.—The Bu-Khail Mountains.

Scale 1 : 250,000.




Amur. But however arid in appearance the rocks of this jagged parting-line between the plateaux and the Sahara, they have a beauty of their own, produced by their bold outlines, sharp profile, and brilliant tints. There are few more impressive sights than the steep cliffs of the Jebel-bu-Khail, streaked in colours caused by erosive action, and forming the scarp of a regular plateau slightly depressed towards the centre. *Ain-es-Sultan*, near this district, marks the extreme limit of the Roman Empire in this direction. A few ruins, the last occurring south from Algiers, attest the presence of the Romans at a point beyond which the French have already pushed the frontiers of their North African possessions.

South-west of Batna the route towards the desert and the railway now in pro-

gress takes the direction of the *El-Biar* pass (3,630 feet), where the road begins to fall, at first imperceptibly, towards the Sahara. The Wed-el-Kantara, a small stream descending abruptly through a succession of cascades from a height of over 330 feet, skirts the highway, swollen by other torrents from all the lateral valleys. The debris strewn at the issue of these gorges are supposed by M. Grad to be moraines of glacial origin. Right and left rise the limestone cliffs, broken by faults, bristling with jagged peaks, offering here and there scarcely sufficient humus for the growth of a few shrubs. But suddenly the cliffs retire and the stream rushes over a cascade spanned by a one-arched Roman bridge, whence the name of El-Kantara, the "bridge" in a pre-eminent sense, a solitary link between the Tell and the Sahara. Of all the many romantic sights in Algeria, none is more striking than this, where the sharpest contrast is presented between the rocky plateaux and the Saharian oases. The Arabs are firmly persuaded, and the belief is partly justified by the facts, that all the moisture-bearing clouds from the Tell are arrested by the summits of the El-Kantara cliffs, where "the rain dies away." On the one hand is the region of winter, on the other of summer; above the Tell, below the Sahara; here the hills are black and the colour of rain, there rose-tinted and the colour of fine weather.

## Biskra—Tolga.

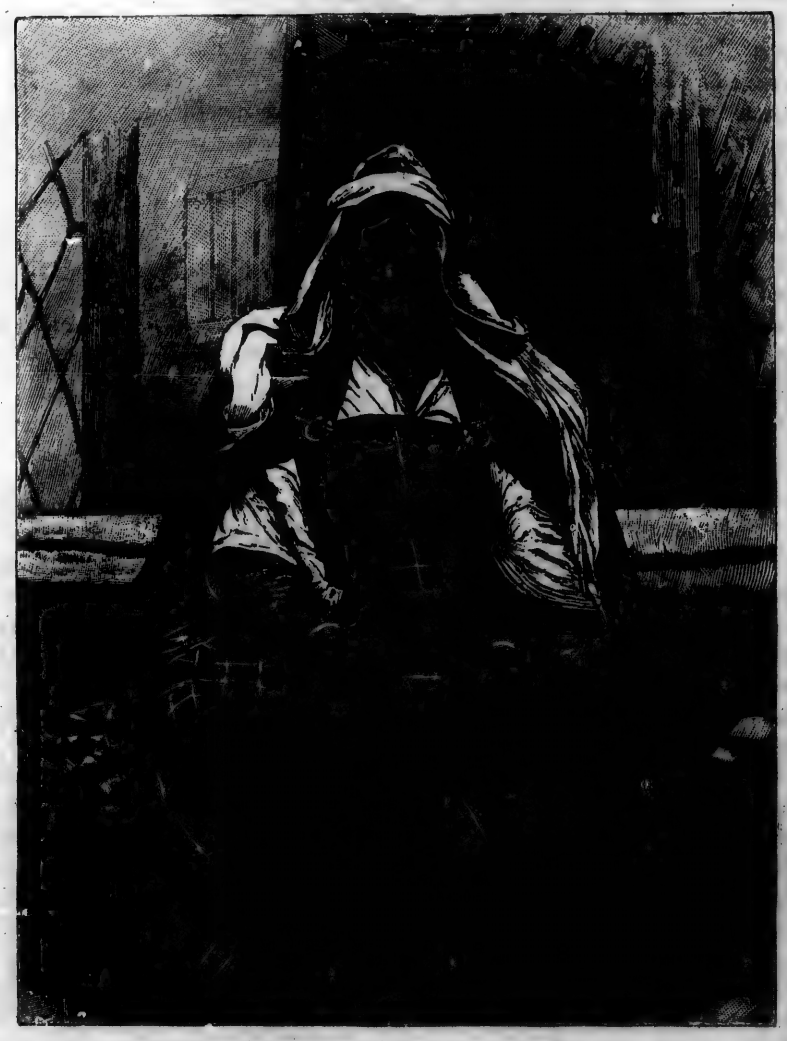
*Biskra*, capital of the Zibâns, who stretch eastwards to the Tunisian frontiers, occupies an important strategic position at the approach to the desert. At this point of the ancient Mauritania the French plough the land already tilled by the Romans, and the present *Fort Saint-Germain* rises not far from the site formerly occupied by *Ad Piscinam*. But farther south no Roman remains have yet been discovered, although legend speaks of a "Rûman" host annihilated by the nomads near *Tamerna*, and of another swallowed up in the *Temassin* swamps.

Like the kasbah that it has replaced, the French fort at Biskra has been erected above the oasis whose waters it commands. Here the united stream of the Wed-el-Kantara and Wed Abdi still discharges a small volume even in summer. The Biskra oasis, which is planted with one hundred and forty thousand date-palms and some thousand olive trees, said to derive from Roman times, has lately become a winter resort, where many invalids from the north of France seek health beneath an ever-cloudless sky.

In the Zab Shergui, or Eastern Zab, the oases are developed in a narrow zone skirted on one side by the escarpments, on the other by the saline margin of the Melghigh depression. In this region the most extensive palm-groves, south-east of Biskra, are those of *Sidi-Okba*, so named from the mosque raised above the tomb of the famous conqueror. Here probably perished, in the sixtieth year of the Hegira, the founder of Kairwan, the leader who, according to the legend, spurred his steed beyond the Maghreb-el-Aksa into the surf of the Atlantic. The zawya

enclosing his tomb has become the religious metropolis of the whole country, and one of the famous schools of Mussulman law in Algeria.

Fig. 132.—Emancipated Negress, Biskra.



South-west of Biskra a numerous group of oases take the name of *Zab Dahri*, the Northern Zab, and *Zab Guebli*, the Southern Zab, names scarcely justified by their relative position to the whole archipelago of the Zibâns. Here also the

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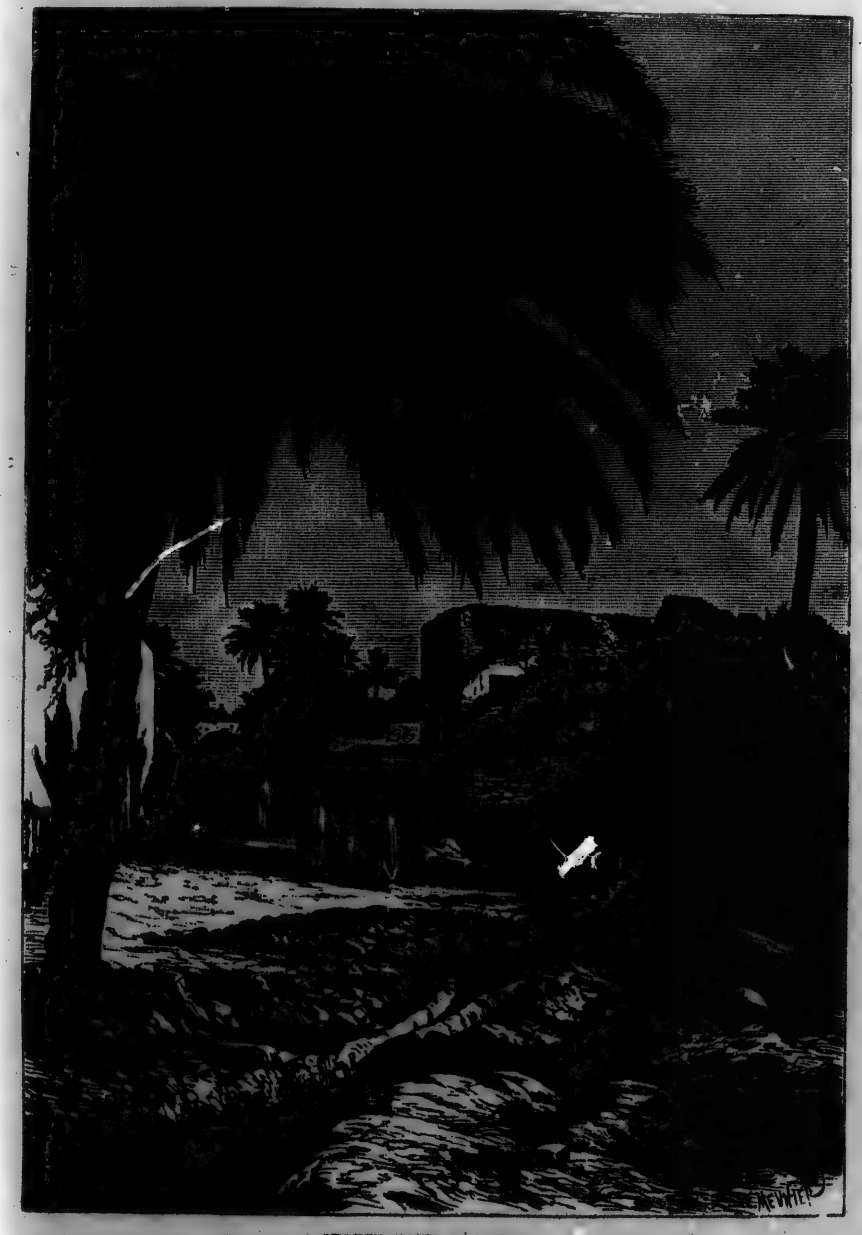


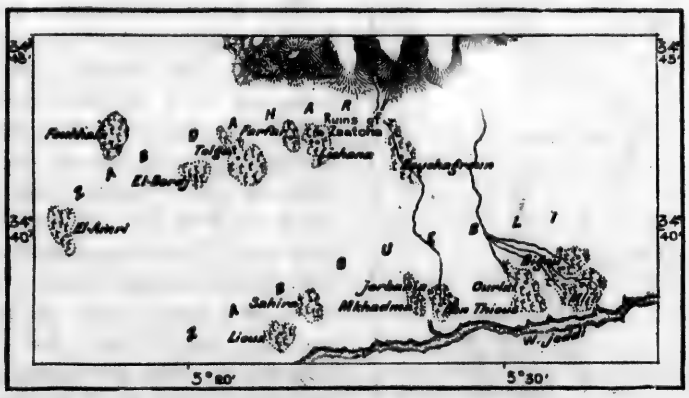
STREET VIEW IN BISKRA.

Roman arms had penetrated, and the capital of these oases still possesses a Roman castle, whose inhabitants have replaced the roof by a layer of earth supporting a few date-palms. The palm groves of the Northern Zab yield the finest dates in the country; but the cultivated tracts do not suffice for the support of the inhabitants, although fresh oases have recently been created by the French settlers.

The capital of the archipelago is *Tolga*, a great religious centre, with some fifteen mosques and a zawya even more powerful than that of Sidi Okba, attracting to its school of Arab jurisprudence as many as one thousand students. Its political influence also, always conciliatory towards the French, makes itself felt as far as the Tunisian frontier. In the Lishana oasis, north-west of Tolga, a few ruins mark

Fig. 133.—Oases of the Northern and Southern Zibans.

Scale 1 : 500,000.




the site of *Zaacha*, which after its heroic defence and destruction by the French in 1849, has never been rebuilt.

South of Biskra, the Tugurt route, which will soon be accompanied by a railway, traverses the newly created oasis of Um-el-Thiur, and after skirting the northern bank of the Jeddi, follows the west side of the Shott Melghigh and its southern prolongation, the Shott Merwan. Here the oases run north and south in the plain of the Wed Righ, beneath which the underground waters are tapped at intervals by old and modern artesian wells. Thanks to the recent borings of the French engineers, the palm groves of *Mghaier* now contain some fifty thousand trees, while extensive tracts have been brought under cultivation in the *Oghlana* and *Tamerna* districts. Since the middle of the century the supply of water has increased four-fold, changing the whole aspect of the Wed Righ, and causing new oases and villages to spring up in all directions.

## Wed Righ—Tugurt.

The Ruagha (Rurha, Ruara), or inhabitants of the Righ, numbering about thirteen thousand, belong to the Zenata Berber family; but their dark colour and Negroid features betray a large intermixture of black blood. Of late years their material condition has greatly improved. They now raise large crops of barley; most of them have become independent proprietors of palm groves, and have paid off the claims of the usurers, by whom they had formerly been reduced almost to the condition of serfs.

Fig. 134.—The Wed Righ Oases.
Scale 1 : 600,000.

*Tugurt*, with its hundred and seventy thousand palm-trees, is the natural capital of the Wed Righ, and the oldest oasis in this region. It lies below the underground confluence of the Wed Miya and Igharghar, 230 feet above the sea, at the eastern foot of a plateau rising several hundred feet higher. Its form is that of an oval enclosed by a broad but now dried-up ditch, beyond which it is protected by a mound from the ever-encroaching sands. Since the French occupation in 1854 the population has doubled, and many of the old earthen or adobe houses have been replaced by dwellings constructed with blocks of gypsum, with galleries and upper stories. Suburbs have sprung up beyond the enclosures, and its trade and industries have been greatly developed. About 8 miles to the south is the religious metropolis of *Temassin*, containing the zawya of *Tamelhat*, a branch of the Ain-Mahdi confraternity, but now enjoying more authority than the mother-house, its influence being felt as far as Senegal.

*Sûf*, the most isolated of all the Algerian oases, lies about 60 miles east of Tugurt, on the route to Jerid. Here the Wed Sûf, whose waters are nowhere visible on the surface, maintains a group of ten oases, with a hundred and eighty

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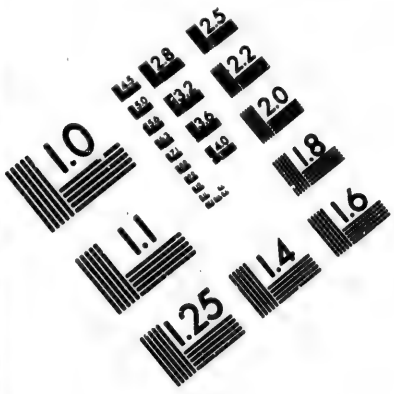


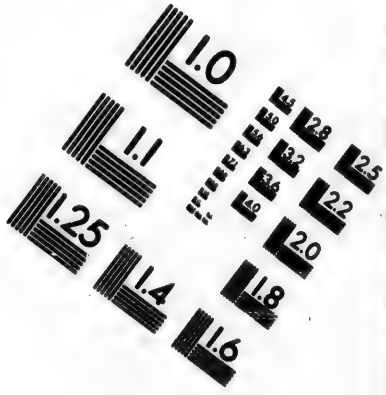


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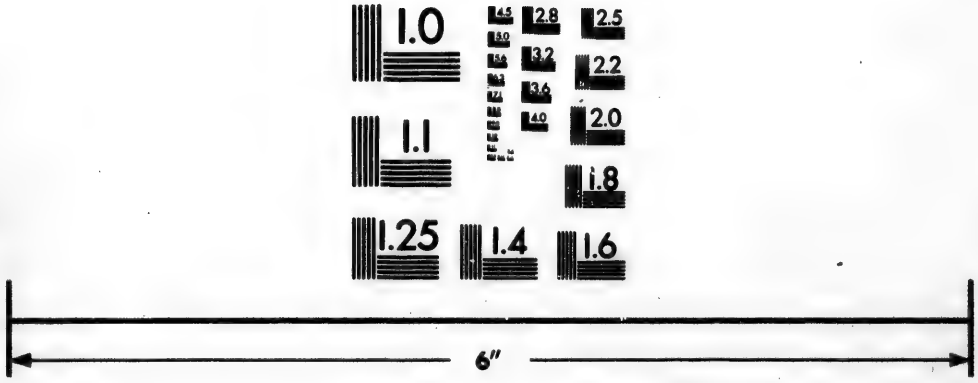

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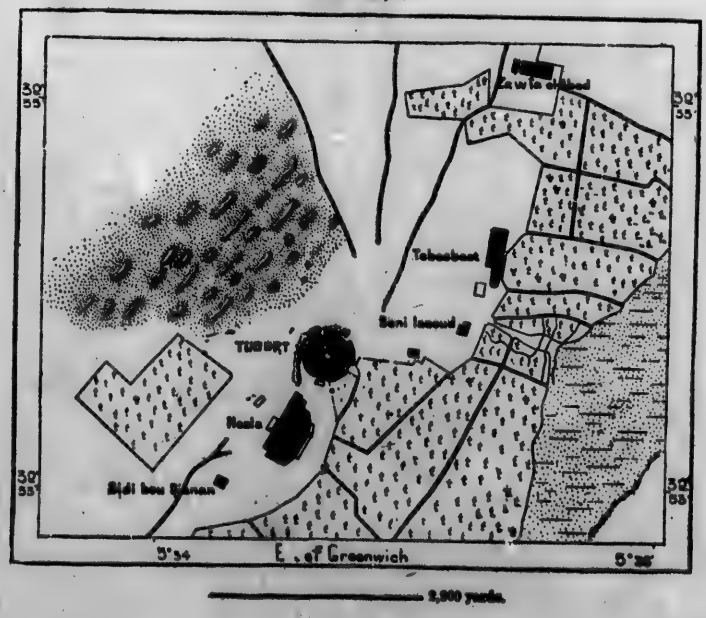
thousand palms, yielding dates of an excellent quality, besides other fruit-trees, such as the orange, apricot, fig, and in the shade, vegetables and tobacco. But like most of the Saharian oases, these gardens belong not to the cultivators, but to the warlike nomads, who claim the larger share of the crops. Grouped under the general name of Trûd, and associated with the Rebaïas, Ferjans, and other marauders, these Arab pastors, who are said to have arrived in the district towards the end of the fourteenth century, pitch their tents in the neighbourhood of the oases, leaving the cultivation of the land entirely in the hands of the industrious Adwans.

*El-Wed*, the chief of the Sûf oases, comprises a group of about one thousand

Fig. 135.—Tugurt.

Scale 1 : 60,000.




houses, and like others in the neighbourhood, is the seat of a religious confraternity, which maintains commercial and friendly relations with all the brotherhoods of North Africa. *Guemar* and *Kwinin* are also populous communities; but most of the inhabitants of Kwinin are nearly blind, from the action of the fine sand with which the air is frequently charged. The Sûf is the only part of the Sahara in which recent marine shells, a *buccinum* and a *balanus*, have hitherto been found. But most geologists are of opinion that these isolated shells are not now *in situ*, but have been brought from a distance by natural agencies.

Like the oases of the Wed Righ, those of the Wed Jeddi belong also to the

basin of the "inland sea," if this term can be any longer applied to the saline depression of the Shott Melghigh. More than half of Southern Algeria draining towards the Sahara, from the Jebel Amur to the Tunisian frontier, forms part of this basin, the central reservoir of which is at present almost dry.

## Laghwat—Mzab.

The watercourse flowing from the rising village of *Aflu*, capital of the Amur

Fig. 136.—Laghwat.

Scale 1 : 18,000.

highlanders, is joined near *Tajemut* by a stream fed by tributaries from the southern Amur valleys, and passing near *Ain-Mahdi*, the religious centre of the famous Tijâniya order, founded in the eighteenth century. But its prosperity was ruined by the choice made of Laghwat by the French as the capital of the Saharian

GENERAL VIEW OF LAGHWAT.

regions in the province of Algeria. Already connected with Algiers by a carriage road, Laghwat (El-Aghwat) seems destined to become the starting-point of the future railway projected in the direction of the Twat oasis. Although standing at an altitude of 2,470 feet, it lies beyond the border ranges of the Algerian plateau, from which it is separated by the valley of the Mzi, which a few miles farther down takes the name of Jeddi. An irrigation canal derived from this stream circulates through the oasis, winding away between two hills to the plains beyond. On these hills are perched the houses of Laghwat, disposed in amphitheatrical form along the slopes. Like those of other Berber towns, the inhabitants were formerly grouped in two distinct quarters, according to their origin. In the public assembly were equally represented the Ulad-Serghins of the west, the eastern Ahlafs, and the southern Ulad-el-Haj-Aïssa, or "Sons of the Pilgrim Aïssa." One of the present Laghwat confraternities belongs to the famous Senûsiya brotherhood.

The fifteen thousand palms of Laghwat, which yield dates of indifferent quality, occupy a part of the oasis, the rest of the land being planted with European fruits, such as peaches, pears, apricots, figs, pomegranates, and vegetables, especially onions, besides some olive, lemon, and orange trees. These varied products are largely exported by caravans, mostly under the escort of members of the Larbaâ Arab confederacy, who are nearly all affiliated to the Tijâniya confraternity.

Below Laghwat the Jeddi traverses districts which in many cases might be brought under cultivation. If properly irrigated, the rich alluvial soil in the depressions, several hundred feet thick, would yield abundant crops. After receiving the waters of the Demmed, flowing from the mountain gorges near the picturesque hamlets of *Messâd* and *Demmed*, belonging to the Ulad-Nail tribe, the Jeddi continues its intermittent course across an extensive steppe region frequented by nomad pastors. The oases, properly so-called, reappear in its lower valley south of the Zab Dahri. Here the most populous settlement is that of the Ulad-Jellals, which comprises no less than fourteen hundred houses, each surrounded by its palms and garden-plot, and possessing its own well sunk to the underground reservoir. The Ulad-Jellals are separated by a feud of long standing from their western neighbours, the inhabitants of the *Sidi Khaled* oasis.

### Ghardaya.

South of the sandy and steppe regions frequented by the Ulad-Nail, Larbaâ, Hajej, and Harazlia tribes, the Beni-Mzab confederation occupies the eastern slopes of the cretaceous plateaux traversed by the Wed Mzab and other surface and underground streams, which flow eastwards in the direction of the Wed Miya. Lying nearly 120 miles south of the advanced French station of Laghwat, the religious and trading Mzabite republic endeavoured long to maintain its political independence; but it was fain, in 1850, to recognise the suzerainty of France. Its capital, *Ghardaya*, was seized seven years afterwards by a French

detachment; lastly, in 1882, its annexation was formally proclaimed, a fort erected above Ghardaya receiving the small garrison which was here stationed to represent the new Government.

## The Mzabites.

Although of undoubted Berber descent, and speaking the language of the Kabyles and Tuaregs, the Mzabites are allied in dogma and rites with the Wahabites of Arabia. Like these, they trace the origin of their sect to the teachings of Abd-Allah ben Ibâdh, who flourished towards the close of the seventh century. The Ibâdhite doctrines were diffused throughout Oman and other parts of Arabia, and thence reached Irak, Khorassan, Turkestan, and India; but they became extinct everywhere in Asia, except in the Arabian peninsula, where they were revived under a new form by the modern reformer, Wahab. In Africa the Ibâdhite propaganda produced more lasting results, but only amongst the Berbers, the Nefusa highlanders in Tripolitana, the Tunisian Jarâbas, and the Beni-Mzab of Algeria. Fundamentally the Ibâdhite teachings represent an older religious evolution than those of the other Mohammedan sects, and in opposition to them allows some scope for the action of free will. Frequently persecuted for their theories and practices, the Mzabites have become "the most reticent of men," so that it is difficult to obtain from them any information regarding their doctrines. By dint of much perseverance and tact, M. Masqueray has, nevertheless, succeeded in getting possession of all their religious writings and historic records, and many of these valuable Arab manuscripts have already been published.

Oppressed by the true believers, the Mzabites have been often compelled to shift from place to place. Forming a branch of the Zenata Berbers, they had founded Tiaret on the upland plateau, about the middle of the eighth century, and for nearly two hundred years they held their ground in this region of northern Mauritania. Vanquished by the Sanhejas, they were thence driven to take refuge in the Sahara, where they occupied the Zibân, Wed Righ, and Sûf districts, sinking wells and with patient industry bringing much land under cultivation. But they were again compelled to quit their new homes, and withdraw to the cirques and higher mountain gorges about the headstreams of the Maya.

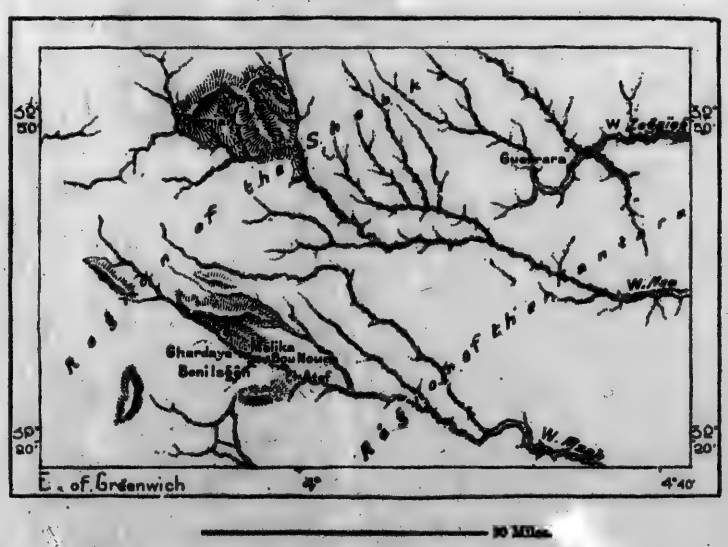
With every exodus their numbers were reduced, but the survivors became banded all the more closely together, displaying an ever-increasing zeal in the observance of their religious practices and national usages. Their *tolbas*, at once judges, priests, and censors of the public morals, armed also with the powers of absolution, purification, and anathema, constitute a true priesthood, in which Masqueray recognises the hierarchy of the Roman Church—possibly a remnant of the religion professed by the Berbers before the spread of Islam. But beneath this Christian element traces are said to be detected of a still older worship, that of the goddess Thanit, "Mother of the Rain."

Most of the Mzabites are clearly Berbers, as shown in their small stature, well-knit frames, broad and even flat features, thick lips, high forehead, deep-set eyes,

and bushy eyebrows. Besides many Negroes, still virtually slaves, some four hundred Jews dwell amongst them, but cannot hold any land in the oasis. Naturally of a peaceful disposition, the Mzabites have allied themselves with some Arab clans, who pitch their tents near the settlements, and who in former times served as mercenaries. Amongst these Arabs are some descendants of the old occupiers of the land, a few even still possessing gardens and houses in the oasis.

Before the annexation, each Mzab village formed a small independent republic, administered by an assembly which was chosen from the heads of families with a stake in the community. On important occasions a general assembly, formed by delegates from the different urban bodies, consulted for the common interests

Fig. 137.—Mzab.
Scale 1 : 1,100,000.




of the confederacy. Quarrels often broke out amongst the various factions, and, as at Ghadames, the combatants fought with the heavy iron or wooden keys of their doors, always worn at the girdle. The head of the family is absolute master, the children being incapable of holding any property without his sanction. The women, who nearly always marry in their native place, are not permitted to emigrate; but they are well protected from insult, any one accosting them in public being banished for the offence. They are chiefly occupied with weaving, entirely a house industry, while the men do all the field and garden work.

According to the census of 1882, the whole group of oases comprise about 193,000 palms, with a population of over thirty thousand. Nearly all are owners

of a small plot, so that there are no mendicants in the confederation. Those

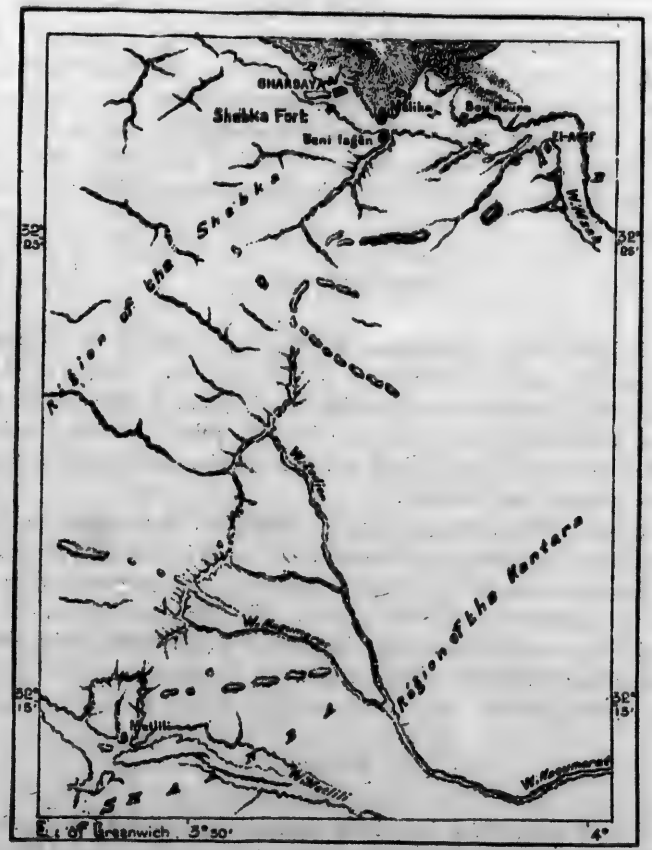
Fig. 138.—General View of Ghardaïa.

reduced to want are supported by their respective communities. But however

well cultivated, the land is insufficient for the needs of all the inhabitants, about one-third of whom reside abroad, chiefly in Algiers, Tunis, and other coast towns. The emigrants leave their famili. in the commune, recognising as their own all children born during their absence, however long they may be from home. On the other hand, most of them set up temporary establishments in the towns where

Fig. 139.—Mzab and Metlili.

Scale 1 : 250,000




6 Miles.

they are settled, and on their return get themselves purified by the priests from the stains contracted during their residence amongst the ungodly. The absentees are still liable to pay the yearly tax, and in this way are said to contribute at the rate of more than one-third towards the expenditure of the mother-country. Owing to their residence in North Algeria, most of them speak French and Arabic as well as

their local Berber dialect; they are also otherwise relatively well instructed, all being able at least to read and write.

Five of the seven Mzabite towns are grouped in an elongated cirque, which is traversed for a distance of 11 miles by the Wed Mzab, in the direction from north-west to south-east. *Ghardaya* (*Taghardeik*), the capital, covers the slopes of an eminence, which is crowned by a mosque with a minaret resembling an obelisk. It is divided into three distinct quarters, each with its separate interests, and all jointly comprising a fourth of the whole population.

The fort of *Shebka*, erected to the south of Ghardaya, overawes this place as well as the two neighbouring towns of *Melika* and *Beni-Isguen*. Melika the "Royal," lying east of Ghardaya, was formerly the holy city of the Mzabites, and in the vaults of its mosque were deposited the treasures of the confederation. Beni-Isguen, situated a little south of Melika, ranks second for population, and is also the best built, the most commercial, and wealthiest place in the oasis. In the extreme east of the cirque lies *El-Attef*, the first place founded in the district by the Mzabites.

### Guerara—Metlili.

Near it is *Bu-Mura*, while *Berrian* and *Guerara*, completing the Heptapolis, lie beyond the cirque, and even outside the Wed Mzab basin. Berrian, on the route from Laghwat to Ghardaya, occupies a small valley, watered by an affluent of the Wed Usa, which feeds some thirty-five thousand palms. Guerar (El-Guerâra), with still more extensive palm groves, lies over 50 miles north-east of Ghardaya on another tributary of the Wed Usa.

The town of *Metlili*, 20 miles south of the capital, on the route to El-Goles, forms no part of the Mzabite confederacy. Its oasis is held by a branch of the nomad Shaanba tribe, which affords protection to the peasantry while appropriating the largest share of their labour. The *Asclepias gigantea*, one of the characteristic plants of the Sudan, flourishes in the Metlili Valley, which also grows enormous cucumbers, about a yard in length.

### Wargla.

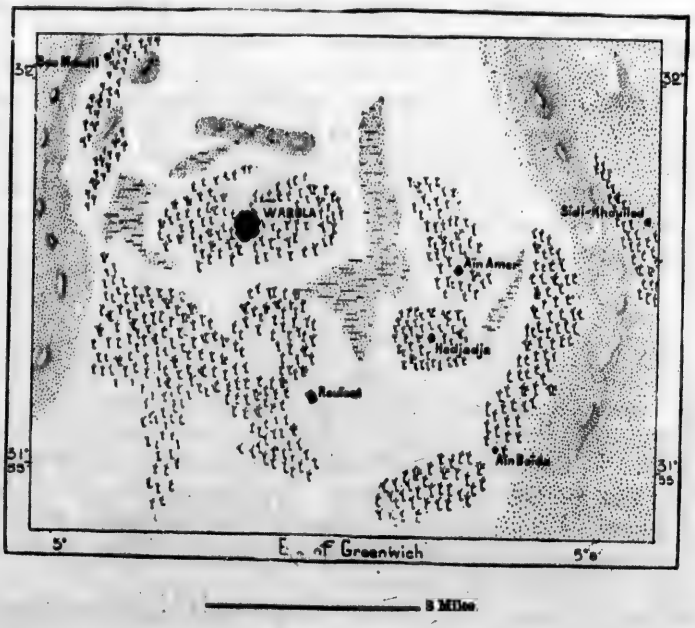
The *Wargla* oasis, which lies along the course of the Wed Miya, above the underground confluence of the Mzab affluents, alone possesses more palms than the whole group of Mzabite settlements. The town is surrounded by a dense forest of some six hundred thousand plants stretching in a vast semicircle beyond the swampy tracts to the south-east. Wargla, which was formerly far more populous than at present, comprises within the ramparts a number of separate quarters occupied by the Beni-Sissin, Beni-Waggin, and Beni-Brahim communities, all half-caste Berbers and Negroes of dark complexion. The well-cultivated oasis of Nguça, situated farther north on the route to Tugurt, is peopled by the Haratins, also a dark-

coloured Berber community, who, notwithstanding their fewer numbers, have often contended for the supremacy with their more powerful neighbours.

A zone of artesian wells, analogous to that of the Wed Righ, occupies the depressions in Wargla and the surrounding oases. The total supply, of about 35 cubic feet per second, has been greatly increased by numerous fresh borings

Fig. 140.—Wargla.

Scale 1 : 150,000.




since 1882. Till recently the wells were "dying" at the rate of one every year, each representing a loss of from fifteen hundred to two thousand palms.

## The Wed Maya.

Beyond Wargla and Nguça a few palm thickets are scattered over the hollows of the Wed Maya. But the whole population is as nothing to what it must have been at a time when the ruins occurring at so many points were flourishing towns, surrounded by cultivated lands. Towards the north, the plain of El-Hajira, about midway between Wargla and Tugurt, was covered with villages, while the town of Bagdad stood on the margin of a now dried-up shott. The most remarkable place in the district was *Sedrata* (*Cedrata*, *Ceddrata*), which has been somewhat too grandiloquently called the "Saharian Pompeii." Under the dunes rolling away

to the south-west of Wargla are still discovered its houses, with their sculptures, wood carvings, ornaments of all sorts, even their very wells. According to the local tradition, the epoch of the Arab invasion coincided with the abandonment of this city, which, to judge from its buildings, was evidently a Berber settlement, and is still claimed as their property by the Mzabites. But vestiges even of an older period are also numerous at the foot of the plateaux. Along the edge of the escarpments skirting the Wed Maya are seen villages of the Stone Age, with workshops of chipped flint implements, and many other objects bearing witness to the relations maintained between the Saharians of that epoch and the populations dwelling on the shores of the Indian Ocean.

Not far from Sedrata rises the old natural stronghold of *Khrima*, which might have served as a refuge for the Ibâdhites when driven from Wargla. From this citadel they may have again retreated towards the valley of the Wed Mzab, whence their present appellation of Mzabites. According to an Arabic manuscript, communicated to M. Terry by a descendant of the old sultans of the country, as many as 125 towns existed in the thirteenth century in a region where are now found two only, Wargla and Nguça.

### El-Golea—Geryville.

Although lying south of the 32nd parallel and five degrees of latitude from the Mediterranean seaboard, Wargla is not the most advanced French station in this direction. *El-Golea*, over 540 miles nearly due south of Algiers by the Laghwat-Mzab route, was first visited in 1859 by Duveyrier, who was here insulted and threatened with death. In 1873 a French column penetrated to this place, which, although no longer held by a French garrison, recognises by a tribute the authority of the Algerian Government.

El-Golea lies beyond the basin of the Wed Maya, and from the mound crowned by its castle is visible the dried-up bed of the Wed Seggwer, which is followed by caravans proceeding to Twat and Timbuktu. A little to the west begins a zone of large dunes, which correspond to the eastern *aregs* between Ghadames and the Ighargar basin. The gardens of the oasis, comprising about sixteen thousand palms, occupy the edge of this zone, and are watered by wells and *fogarats*, or underground channels. But the sands are constantly threatening the cultivated tracts, whose Berber inhabitants are mere serfs in the hands of the nomad Shaanba-Mwadhi, and of the Ulad Sidi-esh-Sheikh marabuts.

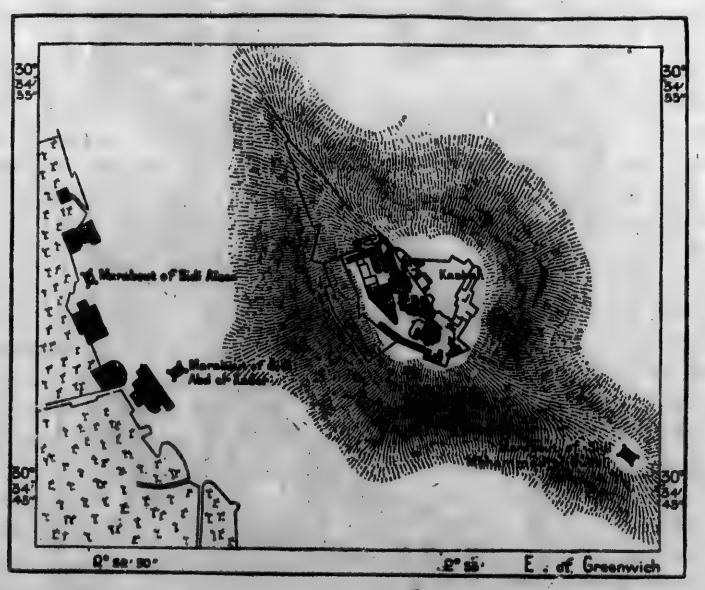
Wargla, El-Golea, and Metlili are the three towns round which gravitate the Shaanba (Shaamba, Shamba) pastoral tribes, who own houses and gardens in these places, and never fail to pay them two yearly visits during the shearing and date-harvest seasons. While the bulk of the clan roam over the steppe with their flocks, a few remain in the oases to look after the tribal interests. Thus the Shaanbas enjoy at once the produce both of their live stock and of their gardens. They also engage in trade, and act as carriers and escorts to the Mzabite mer-

chants. They even occupy themselves with some industries, such as weaving and embroidery, carried on by the women in their tents. Lastly, they have few rivals as marauders. One of their clans are the Hab-er-Rih, or "Breath of the Wind," and, after they have carried off any booty, to the victims of the razzia it is said, "Go, seek the wind." The Shaanbas will make a journey of six hundred miles across the wilderness merely to avenge an insult, carrying off whole herds from their enemies, the Saharian Tuaregs. Although of Berber origin, they now speak Arabic exclusively, and pay the religious tax regularly to the Ulad Sidi-esh-Sheikh.

In Orania, or Western Algeria, the French have advanced far less southwards than in the provinces of Constantine and Algiers. West of the Jebel Amur and

Fig. 141.—El-Golea.

Scale 1 : 4,700.




of the military route, which runs from Teniet-el-Haad through the rising town of Shellala to Aflu, the chief station is the important strategic town of *Geryville*, formerly *El-Biod*, which stands at an altitude of 4,100 feet, in a rich mineral district nine miles west of the native town of *Stitten*. Numerous megalithic remains are scattered over the surrounding heights.

Geryville has not prospered so much as some other towns less conveniently situated on the plateau, but more favoured by the new railway running south of *Saida* in the direction of the alfa region. This line terminates at present at *Mecheria*, but it is to be continued southwards in the direction of one of the numerous breaches in the southern ranges leading to the Sahara.

Of these openings the most important is *Ain-Sefra*, or the "Yellow Spring," which, although 3,570 feet high, already lies on the Saharian slope. Its oasis is watered by a perennial stream, flowing in the direction of the Wed Namus, or "Mosquito River." East of Ain-Sefra, which is the health resort for the troops of South Orania, the somewhat less elevated settlement of *Tiut* is surrounded by palm groves and orchards. On a neighbouring rock are seen some rude representations of men armed with bows and arrows, women, and animals, including an elephant,

Fig. 142.—The Ain-Sefra Highlands.

Scale 1 : 600,000.

engraved perhaps at a time when these pachyderms may have still survived in the district. Similar rock-carvings also occur near the *Mogher Tahteni* oases, on the upper course of the Wed Namus.

All the settlements in this region form so many petty republics, administered by the local assemblies, but recognising the political suzerainty of the Hamian Gharba Arabs. Those lying farther east, in the direction of Geryville—Asla, Shellalar Dehrani, Shellala Guebli, Bu Semghum, Upper and Lower Arba—also recognise the authority of an Arab tribe, the powerful Ulad Sidi-esh-Sheikh family,

which claims descent from the first caliph, Abu Bekr. The haughty members of this tribe are all marabuts, and held in high estimation by the surrounding populations, who are fond of claiming kinship with them. They trace their origin to a saint who lived in the seventeenth century, and whose tomb is shown on the Saharian slope south of Arba. This shrine, surrounded by five villages, is held in great veneration, and was formerly a great centre of sedition and fanaticism. In 1881 it was razed to the ground, but afterwards rebuilt, the policy of the French Government being to control the tribes through the great feudal chiefs. The whole region of the Sahara, from the Marocco frontier to Tripolitana, has already been placed under the absolute authority of the chief of the powerful Sidi Sheikh confederacy. *Bresnia*, on the Wed Seggwer, is the chief granary of the tribe.

## Social Condition of Algeria.

In spite of the omissions and contradictions of the official returns, a general increase of population in Algeria may be accepted as certain. Before the first summary census it was usually estimated at about three millions, although an approximate return in 1851 gave scarcely more than two and a half millions. In 1872, after the terrible famine, which had at least decimated the population, the total scarcely exceeded two millions four hundred thousand. But since that period the two successive censuses of 1876 and 1881 have shown a rapid annual increase of about ninety thousand a year, a rate much higher than that of France. At present the Algerians exceed three and a half millions, and should this rate of progress continue, they will number five millions before the end of the century.

In the returns, the native element is not distinguished according to its Arab or Berber origin. Hence it may be possible, as some assert, that the Arab race is really diminishing, and the Berber increasing. In the towns of Algiers, Constantine, and Oran the mortality is considerably in excess of the births among the Moors, who are chiefly Arabs. But in the rural districts, where the Berber element prevails, the births greatly exceed the deaths. Hence it is evident that the so-called "indigenous" population will long maintain its numerical superiority, although not augmenting so rapidly as the foreign settlers, except in the Kabyle districts.

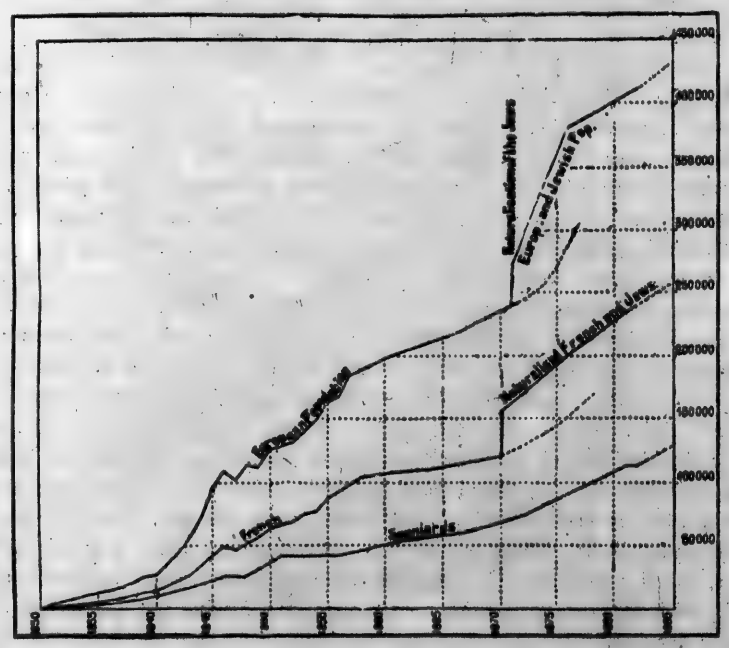
In 1885 the Arabs and Berbers appear to have been six times more numerous than the European immigrants, the Berbers alone representing probably one-half of the total population. They also receive some increase through immigration, the labourers from Marocco being for the most part of Kabyle or Shellala race. By crossing with the natives, the Negroes also contribute to strengthen the Berber element, for they are settled chiefly amongst the Ruaghas of the Saharian districts. But since the suppression of the slave trade the blacks are diminishing in Algeria, partly through absorption, partly through excess of mortality.

Since the conquest the Europeans have augmented according to a regular rate of accelerated progression. Beginning with a yearly increase of a few hundreds,

it gradually rose to some thousands, and may now be estimated at over ten thousand. For the first twenty-five years of the occupation the increase was due exclusively to immigration, for at that time the mortality, owing to various causes, was much higher than the births. But the race has now struck root, so to say, in Algerian soil, and the theory denying the possibility of acclimatisation has been negatived by the results. European marriages are both more frequent and more fruitful than in the mother country, and of the present annual increase about one-fifth is due to excess of births over deaths.

In the European colony the French have a numerical superiority over all others since the year 1851, although the difference is slight, regard being had to

Fig. 143.—Growth of the European Population in Algeria since 1830




their preponderating political influence. The Maltese, who during the first years of the occupation arrived in large numbers, as camp sutlers, petty dealers, and gardeners, are now scarcely seen in the country. But their place has been taken by Calabrians and other Italians, who come in ever-increasing numbers, seeking employment as builders and navvies. Still more numerous are the Spanish settlers, who comprise at present about one-fourth of all the Europeans residing in Algeria, while in the province of Oran they are in the majority. But even here all the European elements show a general tendency to assimilate with the preponderating French population. The advantages of naturalisation are so great that many

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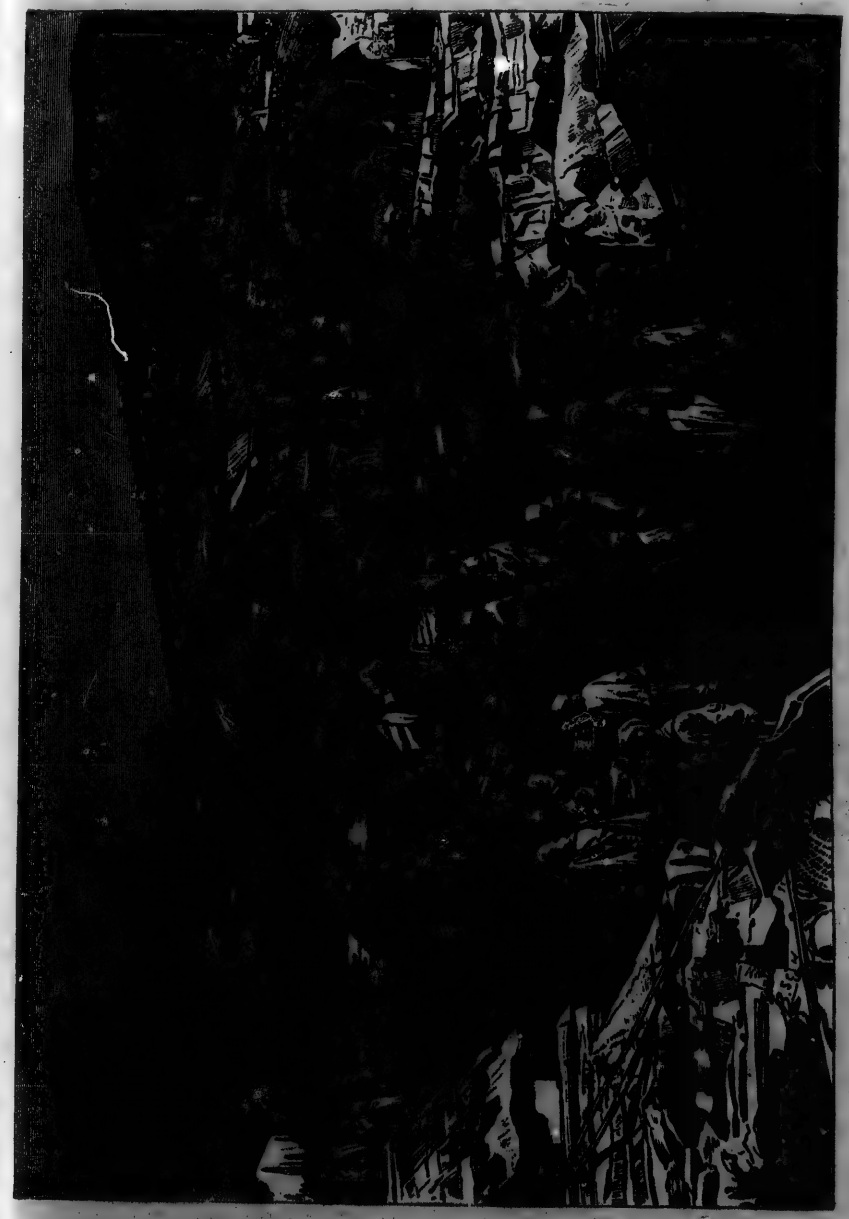


BEN-BAYARDS QUARTER, CONSTANTINE.

naturally seek to become French citizens. Large numbers of Italians, Spaniards, and Germans have thus already changed their nationality; while the immigrants from Alsace-Lorraine, officially returned as Germans, claim their right to the title of Frenchmen.

The Algerian Jews, descended for the most part from Andalusian exiles, were all naturalised in 1870, to the great disgust of the Arab and Berber Mussulmans, who could not understand why this honour should be conferred on such a despised race, while the children of the soil were treated as a subject people. But although now nominally "French," most of the native Jews are still regarded as forming a distinct nationality. At the same time a slow process of assimilation in dress, usages, speech, and ideas is evidently going on, in this respect the second generation of Jewish settlers showing a marked advance.

On the other hand, the Arab Mussulmans could claim naturalisation only under exceptional circumstances, and on the condition of abandoning the precepts of the Koran. So merged is their law with their religion, that the mere application for French citizenship is looked upon by their fellow-countrymen as a sort of apostacy. But this is not the case with the Kabyles, who have never conformed their jurisprudence with the teachings of Islam. Hence whole tribes of Berbers have already applied for naturalisation, and but for certain administrative formalities and the opposition of many functionaries, the half-million inhabitants of Kabylia would gladly ask for incorporation in French society.

One of the chief causes of the rapid assimilation of the various European elements is the adoption of French as the common language of intercourse. Those who can already speak it more or less fluently may be estimated at over a million. Till recently the so-called *Sabir* served as a sort of *lingua franca* amongst the various inhabitants of the country. But this was altogether a formless jargon of a rudimentary character, composed of about two hundred words, verbs in the infinitive, nouns, adjectives, or adverbs, used without inflexions and somewhat incoherently, the sense being eked out by a lively display of pantomime and facial expression. Half of the words were Arabic, a fourth French or Provençal, the rest Spanish, Italian, or Maltese; but it is everywhere disappearing under the combined influences of commercial intercourse and the Franco-Arab schools.

A certain national uniformity is also promoted by mixed marriages, although such unions are still rare between the Europeans and the natives. Their offspring are seldom admitted into French society; yet it is impossible any longer to overlook the presence of these half-castes, who remain nominal Arabs, but who become Franco-Arab in speech and usages. To this class belong the so-called "Beni-Ramasses," people of all professions, known in the Algerian jargon as Ulad-Blaça, or "Children of the Piazza," because their homes are mainly the open spaces in the towns.

### Forests—Agriculture.

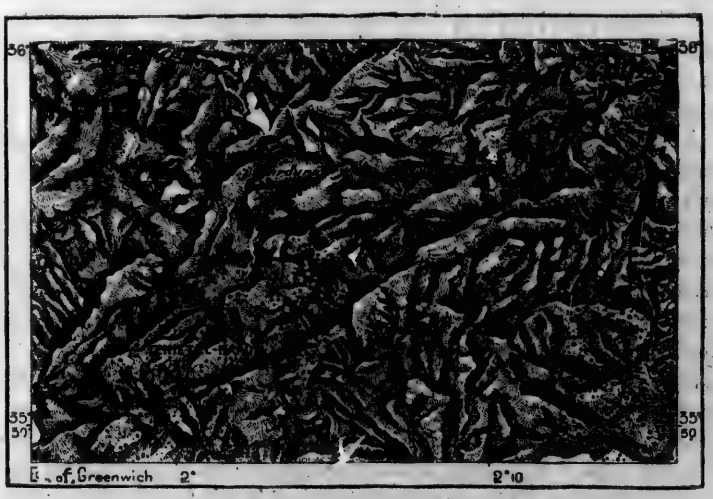
Of the vast but still scantily peopled productive lands in Algeria, only a very small portion has hitherto been turned to any account. Most of the occupied

districts are either grazing-grounds left in a state of nature, or subjected to a rudimentary system of tillage. Even in the Tell vast tracts are absolutely barren, while on the plateaux argillaceous or saline wastes cover boundless spaces. Most of the now treeless northern parts might, however, be clothed with a forest vegetation, and thus play an important part in modifying the climate and developing the economic conditions of the land.

According to the official returns, of the 35,000,000 acres representing the surface of the Tell, nearly 2,000,000 are under forests. The intermediate region of the plateaux and shotts, with the approaches to the Sahara, comprise a further wooded area of 220,000 acres, at least if public documents issued in 1885 can be trusted. But most of these so-called "forests," or "woods," are mere thickets and

Fig. 144.—Teniet-el-Haad and its Forests.

Scale 1 : 300,000.




scrub, and in some places little more than open spaces dotted over here and there with a few clumps of stunted shrubs. The 2,000,000 acres of forest placed, in 1884, under Government agents yielded only £20,000, or little more than fivepence per acre. The only well-preserved woods are those of East Algeria, of some parts of Kabylia, and of Teniet-el-Haad in the uplands stretching east of the Warsenis district. These woods, consisting chiefly of cedars, cover a space of 7,500 acres, at altitudes varying from 4,000 to 5,600 feet. In general, forest-trees may be said to diminish from east to west, in the same proportion as the rainfall. In the province of Constantine they are still numerous, and in that of Algiers already thinly scattered, while in Oranie they have almost disappeared.

The chief agent in the destruction of the woodlands is fire. In order to enlarge

their pastures, sometimes also to protect themselves from the wild beasts, the Arab shepherds fire the dry herbage without taking the necessary precautions to limit the action of the flames. Hence, when the wind blows, the woods are kindled, and the conflagration spreads far and wide. In the month of August, 1865, a vast sheet of flame, fomented by the sirocco, consumed in five days most of the forest zone stretching for a breadth of from 25 to 50 miles over the Bona uplands. A space of over 250,000 acres was laid waste on this occasion. In 1881 the forests about Bougie were similarly ravaged, and in 1885 Orania lost the finest remains of its old forests. To prevent the recurrence of such disasters the severe measure has been taken to hold the whole tribe responsible in whose district fires break out, and confiscate their lands. But this barbarous process is useless to prevent the evil, because the real culprit generally belongs to a different community from that where the fire breaks out. A more efficacious remedy will be found in the systematic efforts now being made to replant the wasted lands. If the plans elaborated by the Government in 1885 are carried out, several tracts, comprising altogether about 270,000 acres, will again be clothed with timber at an outlay of under £700,000.

The new settlers also find themselves obliged to plant as well as sow. Every village and hamlet has now its clump of trees, and on the plains the farmsteads are indicated at a distance by clusters of eucalyptus and other large trees. Many Algerian villages already possess avenues as fine as those of the towns in the mother country. In some places these plantations are necessary to dry up the fever-breathing swamps and render the district inhabitable. Thus Bufarik, where "the atmosphere poisoned the very birds of passage," has been rendered healthy, and the whole of the Mitija Valley covered with gardens and orchards. Nursery-grounds have been established at intervals along the railway routes and about the stations, and in 1884 as many as 470,000 trees were counted on the Algiers-Oran line. Of the exotics introduced by Europeans, the most widespread is the eucalyptus, of which over a hundred varieties have made their appearance since the first specimen was planted at Hamma in 1861. In the Garden of Acclimatisation at Algiers as many as 4,500 foreign species are now flourishing.

No other Mediterranean region is more suited for the production of olive-oil; but, except in Kabylia and some parts of the province of Constantine, the olive groves are neglected, and yield only an indifferent oil, used in Marseilles in the preparation of soap. The table oils consumed in Algeria are nearly all imported from France. On the eastern plateaux, and even in the valleys of the Jebel Aures, where the remains have been found of so many Roman oil-presses, nothing is now seen beyond a few clusters of olive-trees, which, however, yield, with those of the Bougie district, the most highly esteemed oil in the whole of North Africa.

In the northern regions the most widely diffused fruit-tree is the fig, which thrives well in stony places, and which in Kabylia is almost as useful as is the date on the verge of the desert. But here a still more useful plant is the cork-tree, the bark of which, although less prized than that of Catalonia, forms an important article of export. If properly administered, the cork forests of Algeria should yield

an annual income of about £600,000, which is about four times more than the present revenue derived from this source.

In the Algerian Sahara the date-palm forms the great resource of the inhabitants. But for this wonderful plant, which yields them half their nutriment and enables them to procure the other half, the Saharian populations could not exist in this sand-encircled region. Every tree is tended like a member of the family: watered, cleansed, regarded as a being endowed with soul and sentiment, showing its gratitude for fostering care by an abundant crop of fruit, its anger at neglect by a scanty harvest. "When a living palm is felled," says the legend, "it cries like a child, and its murderers are moved to pity." Till recently throughout all Mussulman lands, as still in Marocco, international right, which tolerated homicide, never allowed a palm to be touched. In southern Algeria the palm groves comprise altogether about three million plants, yielding a revenue of considerably over £2,000,000. In some of the oases, and especially in the Mzab Valley, a single plant is sometimes valued as high as £32.

As in the Roman period, the chief crops in the Tell are still cereals, such as hard wheat, barley, beahna or millet, maize, and, since the French occupation, rye, oats, and soft wheat. In good seasons the yield suffices for the supply of men and animals, leaving some barley, oats, and hard wheat for exportation. In ordinary years the cereals represent one-fifth of all the exports from Algeria. The gardens along the seaboard also forward considerable quantities of oranges, lemons, bananas, and other fruits; and this trade in fruit, which might be greatly developed, already supports a large commercial movement with the mother country.

Of economic plants, tobacco is much favoured by the new settlers, although many planters have in recent years exchanged it for viniculture. Cotton also came into favour during the American war, but is now seen only in a few districts of the Tell and in the Wed Righ, where some Sudanese varieties are grown, whose fibre resembles that of the United States "long silk."

### Alfa and Viniculture—Stock Farming.

Far more important than all these cultivated plants is the alfa, or halfa, grass, which grows wild on the plateaux, and of which a financial company has acquired the monopoly over a space of some 750,000 acres south of Saida. The fibre of the alfa, which yields a yearly revenue of from £600,000 to £800,000, is employed chiefly in the manufacture of paper. The esparto grass of the Spanish province of Murcia having become almost completely exhausted, the English dealers, who are the chief purchasers of these fibres, turned their attention to the Algerian alfa. Since the first cargo shipped at the port of Oran in 1862, the trade has acquired an enormous development throughout the plateaux. But extensive tracts have already been exhausted, and speculators have now begun to replace the alfa by the dis, another fibrous plant long employed by the Arabs for making canvas sacks and cordage.

In recent years the vine has chiefly engaged the attention of the peasantry. Vineyards have been laid out throughout the Tell and even on the upland plateaux, and this industry has even been taken in hand by the Mohammedans, notwithstanding the precepts of the Koran. In 1885 the vintage exceeded forty-five million gallons, so that after the great wine-growing countries, such as France, Spain, Italy, and Hungary, Algeria ranks amongst those in which viniculture has acquired the greatest development. Some of the vintages, amongst others those of Miliana, are highly esteemed, and even in the last century Shaw compared the flavour of the wine grown in the Algiers district to that of Hermitage. Large companies have been formed to clear the land and create vineyards many thousand acres in extent. But alarm has been caused by the appearance of phylloxera, in 1885, at Mansura, near Tlemcen, and afterwards in the Sidi-bel-Abbes district.

A more formidable scourge of long standing are the locusts, which are hatched in countless myriads on the steppes, where they are salted down and consumed as food by the nomads. A flight of moderate size observed in the Medea district in 1874, formed a compact mass 15 by 2½ miles, or 40 square miles in extent, comprising at least fifty billions of these winged pests. The invasion of 1866, which caused a direct loss of about £2,000,000, was followed next year by a frightful famine, during which probably five hundred thousand natives perished of hunger and want. Since then successful attempts have been made to localise the evil by means of metallic plates disposed in such a way as to present an effective barrier to the advance of the migratory species (*acridium migratorium*). The winged variety does little harm, being mostly blown seawards, as happened in 1865, when the dead bodies washed ashore lined the beach to a depth of from 10 to 12 feet.

Of domestic animals, the most noteworthy is the famous Barbary horse, bred in the nomad encampments on the upland plateaux. According to the census of 1881, about five-sixths of the Algerian horses were still owned by the natives, who possess even a larger share of the mules and asses, and almost all the camels. To the Arabs further belong most of the horned cattle, sheep, and goats; and Tiaret, the chief market for live stock in Algeria, lies in Arab territory. On the other hand, nearly all the swine are owned by the European settlers, although some of the Kabyles breed this animal, regarded as "impure" by all true believers. The live stock was greatly reduced by the scarcity of fodder in 1882, when the Arabs lost over a million of animals.

## The European Settlers.

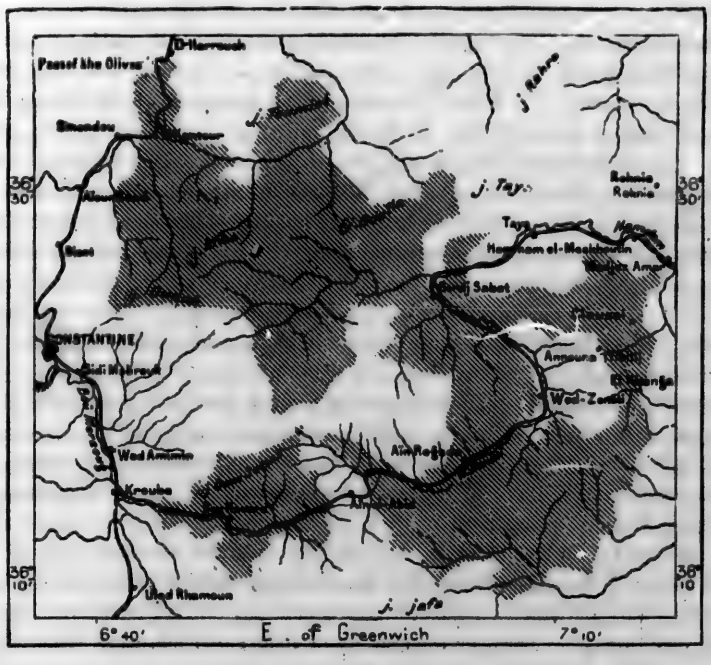
Like most other European colonies, Algeria can scarcely be said to have any peasant class, properly so called. The European rural population, which represents about half of the immigrants, is mainly of urban origin; hence is produced a phenomenon the very reverse of what is observed in France. In the mother country the towns are inhabited by people from the country; in Algeria the country is settled by townsfolk. Relatively speaking, the Algerian farms are

better stocked than those of France, and in many places even the natives possess improved ploughs.

The French are naturally the most numerous element in the rural districts. After the loss of Alsace and Lorraine, over one thousand expatriated families were provided with land, thanks to the contributions raised by the "ladies of France," and fifty-six villages were founded or enlarged for their reception. Most of these concessions, however, have already changed hands. The settlers become proprietors only on condition of residing five years on the plot assigned them by the

Fig. 145.—A Great Algerian Domain.

Scale 1: 600,000.




Domain of the Algerian Company.

15 Miles.

State. But during the decade which follows the distribution of land to the colonists, about half of them sell their share to others.

There still remain to be appropriated vast tracts, which belong to the Government under various titles, one of which, unfortunately, is that of sequestration pronounced against the tribes. But the process of concession hitherto adopted not only burdens the finances with a considerable yearly outlay, but also generally proves more expensive to the colonists than if the concession had been purchased

at a fair valuation. Nor can this method of colonisation fail to be affected by the taint of official favouritism. In such cases personal recommendations are all-powerful, for the concessions can never be claimed as a right, and always retain the character of a favour. The concessions generally range from fifty to seventy-five acres, far too much to be properly tilled by one settler; hence the land is, to a large extent, cultivated by the aid of native hands. The same evil prevails amongst the Arab proprietors, who employ as day labourers the wretched *khammes*, or "tenants at fifth hand."

The direct purchase of State lands is of rare occurrence; but a general movement of exchanges is going on, tending to enlarge the estates of the settlers at the expense of the natives, whose ignorance often places them at the mercy of unscrupulous speculators. Men skilled in legal quibbles take advantage of their superior knowledge to get unfair possession of the territory of whole tribes. To prevent these and other abuses, arising out of the uncertainty of titles, it would be desirable to accurately survey the Arab lands, determine the limits of each holding, and secure its full possession to the occupant. Such a survey was begun in 1873; but at the end of 1884 only 1,750,000 acres, or about a twentieth part of the Tell, had been dealt with—a rate of progress which would require two centuries to complete the work. The delay appears to be caused by the influence of a large section of Algerian society, which has a direct interest in leaving questions of proprietorship and titles in a general state of muddle.

## Industries—Trade.

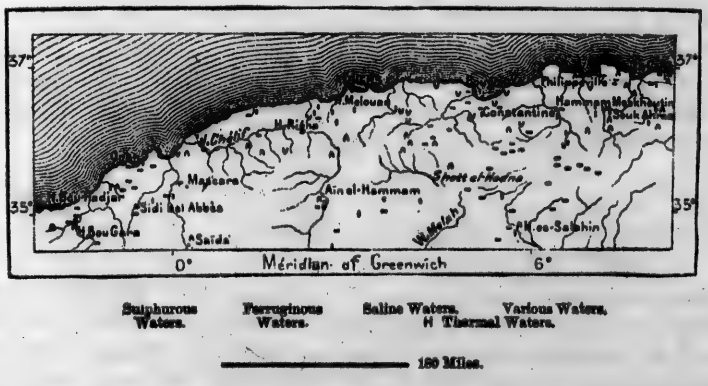
European industry is limited in Algiers to the supply of a few local wants, while that of the natives has been paralysed by the introduction of foreign wares. There is an almost total absence of mineral coal, and the reserves of wood and other fuel require to be managed with the greatest economy, while the apparatus introduced to utilise solar heat have hitherto yielded no results of any consequence. Hence it is not likely that Algeria can ever become a great manufacturing country. Its hides, wool, and other animal products supply the workshops of Marseilles; alfa finds its way to England to be converted into paper; cork is utilised in the French wine trade; the Beni-Saf and Ain-Mokhra mineral ores are exported to the foundries of Europe and the New World; the salines on the coast cannot compete with those of France, while the vast salt deposits in the shotts of the plateaux are used only by the surrounding tribes. The mineral and thermal springs, which are scattered abundantly over the whole region, offer efficacious remedies for the most diverse maladies, but hitherto a few only have been frequented by European invalids.

The annual movement of trade between Algeria and other countries, France included, already exceeds £20,000,000. Since the year of the conquest, the mean price of its produce has increased threefold, and its exchanges nearly a hundredfold. But the imports have always exceeded the exports, and this relation must continue as long as Algeria is occupied by a large army supplied from the mother

country, and the colonists take months and years to pay for their European wares by the products of their plantations. At the same time, the relative increase in the exports keeps pace with that of the imports, and Algeria already takes the eighth place in the extent of its commerce with France. The ports of Bona, Philippeville, Bougie, Algiers, Arzeu, and Oran are amongst the most frequented in the Western Mediterranean waters, and the annexation of Tunis has given a great stimulus to the commercial movement with the interior. Some trade is also done across the frontier with Marocco; but it is mainly of a contraband character, and almost entirely in the hands of the Jews. But south of Wargla and Sûf all intercourse with the Saharian oases is for the present nearly suspended. Nevertheless, after four years of total interruption, a caravan, comprising one thousand persons and three thousand camels, proceeded in 1884 from the Ben-Khelil wells, in South

Fig. 146.—Thermal Springs.

Scale 1 : 9,500,000.



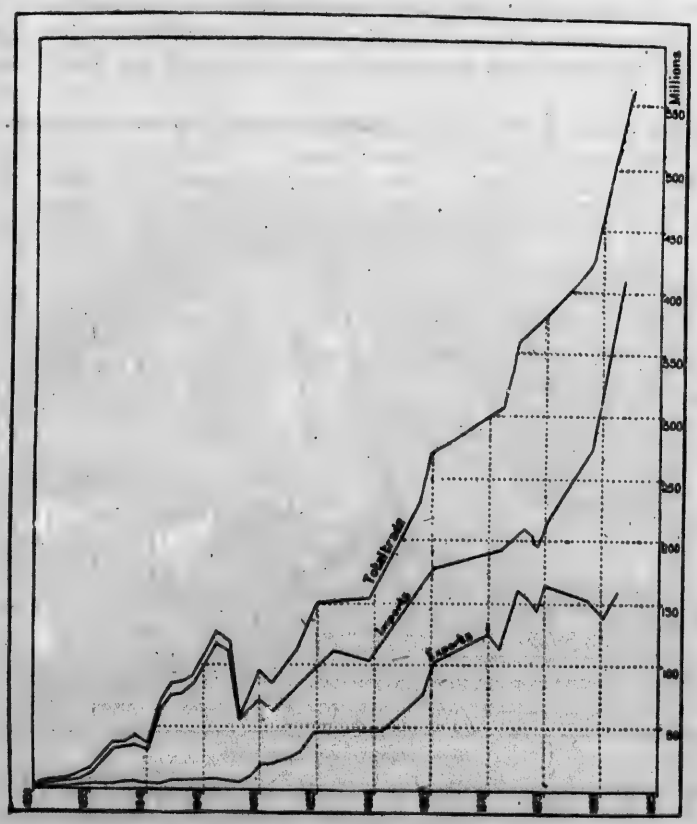

Orania to the Gurara oases, returning in company with the Dui-Menias of Marocco.

Nearly all the trade of Algeria being sea-borne, navigation has necessarily increased in the same proportion as the movement of exchanges. But steamers, either independent or subsidised by the Government, have entirely replaced sailing vessels, except in the fisheries and the coasting trade. The general movement of navigation is represented by over ten thousand ships of all sizes, with a total tonnage of about four millions. Of this France possesses about two-thirds, thanks to the steamships plying regularly between the French and Algerian coasts. Next to France come England, which exports most of the alfa, and Spain, which has the advantage of position, but which mainly employs small craft.

A regular service of steamers is maintained between the Algerian seaports and those of the Western Mediterranean basin. About thirty trips are made on the average every month across the intervening waters; but in this growing traffic

a very small part has hitherto been taken by Algeria itself. The land communications in the interior are also well developed, and in proportion to its population Algeria has more carriage roads than France. The stranger visiting the outskirts of Algiers and the other large towns, is surprised to find so many broad, well-kept

Fig. 147.—Growth of the Foreign Trade of Algeria since 1830.




highways on the African continent, and the mental comparison which he makes with many European countries is to the advantage of the French colony

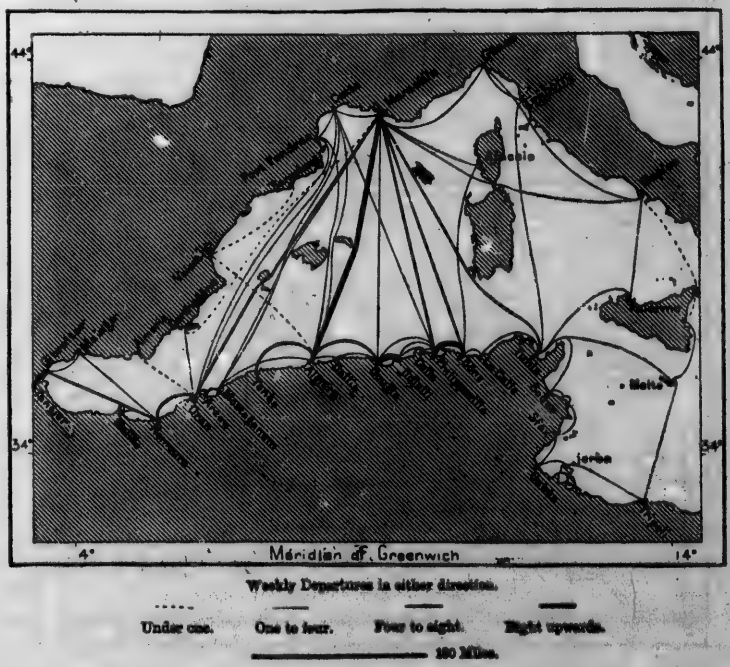
## Roads and Railways.

In 1830 the only roads in the regency were the tracks of shepherds and their flocks, and the beaten paths of caravans along the streams and through the mountain gorges. But during the first years of the French occupation, one of the chief

works of the army was that of road-making, and Algeria may be said to have been reduced far more by the construction of strategical routes than by force of arms. Even still thousands of military convicts are employed on these works, jointly with Calabrian, native, and other navvies, yet the system of main highways has not yet been completed. Between Tunisia and Marocco a single route, running through Suk-Ahras, Guelma, Setif, the Mitija and Shelif valleys, and Tlemcen, serves to connect the lateral roads branching off towards the interior, or northwards to the coast. The coast route, intended to connect La Calle with Nemours, is still interrupted by numerous gaps, representing over one-half of the whole distance.

Fig. 148.—Lines of Steam Navigation between Mauritania and the opposite Coast.

Scale 1 : 15,000,000.



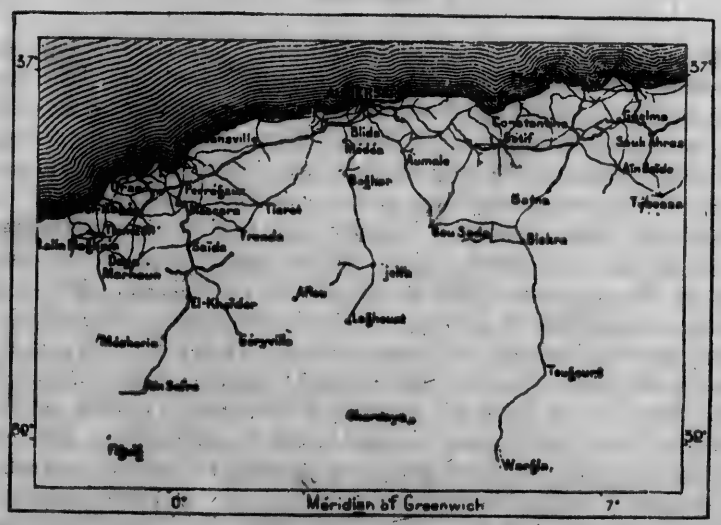

Several important communes also are still accessible only on foot or on horseback, and the important town of Jijelli still remains completely isolated for want of any carriage roads.

Railway operations began in 1860, and the first section was opened in 1862. At present the total development, exclusive of the single lines used for carrying alfa, is nearly 1,200 miles. But the great central artery, between Tunis and Marocco, is not yet completed, a break occurring (1885) south of Kabylia, between El-Ashir and Palestro, in the direction of Marocco, while the locomotive stops at Ain-Temushent, within 60 miles of the frontier. Several seaports, such as Nemours,

Beni-Saf, Mostaganem, Tenes, Shershell, Dellys, Bougie, Collo, and La Calle, still await the branches that are to connect them with the trunk line. These, however, have all been either begun or at least projected. All the companies have received Government aid by advances and concession of land. Yet in certain places, especially between Algiers and Blida, and on the Philippeville-Constantine section, the local traffic has already begun to yield ample returns on the capital originally invested. The tariff is everywhere very high, sufficient interest on the outlay being guaranteed by the Government to render the companies independent of the

Fig. 149.—Roads and Railways of Algeria.

Scale 1 : 9,500,000.




public favour. Hence along all the lines ordinary coaches are able to compete successfully with the locomotives.

South of the great central artery, three lines already penetrate to the plateaux in the direction of the Sahara. One of these runs from Constantine to Batna, another from Saida to Mesheria, and the third from Sidi-bel-Abbes to Ras-el-Ma. Thanks to these new means of communication, colonisation may now be diffused throughout the plateaux better than in the regions lying between Aumale and Laghwat.

The great continental line across the desert to the Niger, first proposed by MacCarthy, will probably run from Algiers through Blida and the Upper Isser Valley to the upland plateaux, and so on by Laghwat and the Wed Jeddi Valley to the Sahara and Timbuktu. But several alternative projects have been suggested, and several important expeditions have been undertaken to survey the ground.

Nevertheless the construction of a trans-Saharian line can hardly be seriously taken in hand until the great Algerian railways are farther advanced towards completion. The Algerian system itself has to be farther developed in the direction of Twat, which lies about midway between Algiers and Timbuktu. When the almost unknown desert region beyond this point has been sufficiently surveyed, the trans-Saharian line may be pushed forward in the direction of the Niger. Other schemes have been advanced, which are intended to connect the Igharghar Valley with the Tsad basin across Central Sahara.

## Administration—Tribal Organisation.

The administration of Algeria, which is attached to the Ministry of the Interior, is directed by a civil governor-general, commander in chief of the land and sea forces, assisted by a director-general and a Government council. But the action of this central power is brought to bear through different channels on the natives and the European settlers. The latter enjoy the same rights as in France, whereas the Arabs and Kabyles are practically at the mercy of the administration.

The Arab tribal organisation is nearly always of an aristocratic character. Comprising a group of families which believe themselves sprung of a common stock, the clan recognises a chief at once military and religious. The dwar, or encampment established on the steppe or near the arable lands, is the original unit, out of which is developed the group of tribes. In each dwar the authority is vested in the heads of families, and especially those who can boast of the noblest birth. Several dwars, united in a *ferka*, are administered by a sheikh or "elder," or even a kaid, when the group is large enough to constitute a whole *arsh*, or *rija*, that is, a number of persons which may vary from five hundred to as many as fifty thousand. The kaid is subordinate to an agha, and the latter to a bash-agha or a khalifa, who are all so many absolute kinglets in their respective spheres, uncontrolled by any elected body of advisers. Nevertheless, a certain democratic spirit has been fostered in the dwars, thanks to the jemaâ, or assembly, constituted by the heads of families, or by the kobars alone, that is, by the "grandees," consulted by the sheikh of the ferka on all weighty matters. Very different is the assembly of the Berber communes, in which the old customs are still respected. Amongst them the whole people form the assembly, whose authority is limited only by traditional usages.

In all Arab communities, questions of genealogy are of paramount importance. At first the French governors adopted the policy of relying on the chiefs of the warlike tribes, in order to secure the pacification of the country, neglecting no devices to attract them by titles, honours, the grant of fiefs and domains. But the aristocratic tastes and traditions of the Arab people have the fatal consequence of engendering fierce rivalries in the struggle for power. Three distinct orders of nobility contend for the ascendancy amongst the tribes: the *juads*, or sons of chiefs, who by right or usurpation claim to be sprung from the companions of

Mohammed or the conquerors of Mauritania; the *shorfa*, who regard as their common mother Fatima, wife of Mohammed, and who consequently belong to the Prophet's family; lastly those whose ancestor is some reputed saint or marabut, and who have thus acquired a sort of nobility not less respected than the others. All these men stand higher than the common mass of the faithful, and when favoured by circumstances, such as tribal feuds, wars, commotions, or family occurrences, are ever ready to enforce their pretensions.

The tribal groupings also are not unfrequently modified, the followers of contending parties passing from one side to the other, according to the vicissitudes of these ambitious rivalries. Fragments of a single tribe have thus occasionally become scattered throughout the whole of the Barbary States. Hence by purchasing the friendship of one chief or another, the French Government has vainly hoped to secure the loyalty of the whole tribe, the official protégé being simply replaced by some more popular rival in public favour. The policy pursued by the French has also at times simply resulted in the creation of formidable opponents by founding real Arab monarchies. It was hoped that the work of pacification would be made easy by dealing with a single chief instead of with the several heads of countless tribes. Thus it was that under French patronage Abd-el-Kader became a sultan, and the chief of the Ulad-Sidi sheikhs received as a fief the whole of the Algerian Sahara, while Mokhrain assumed almost supreme power in southern Kabylia. The lands hitherto reserved for the commune, the widow, the orphan, and the poor, thus passed into the possession of the great feudal lords. Nevertheless the vassal chiefs continued still powerful enough to revolt, and even since the French occupation have waged war with their suzerain.

## Social Changes.

But this régime of the great Arab fiefs is drawing to a close. The virtually independent chiefs are being gradually replaced by French administrators, or by Mohammedan kadis, entrusted with the administration of justice, in accordance with the Moslem jurisprudence accepted by the French tribunals. Sheikhs, kaids, aghas, and bash-aghas, receive their investiture from the French authority, and yield direct obedience to its orders. Their judicial functions are strictly limited; but they have not yet been deprived of the traditional prerogative of indemnifying themselves from the proceeds of fines imposed on criminals—a prerogative which has always proved a source of the most crying acts of injustice.

The dwars no longer enjoy the same facilities for migrating from the uplands to the plains, and according as the country becomes settled, the nomad tribes find their freedom of action more and more restricted. A continually increasing number of natives are also abandoning the primitive tribal organisation, and attaching themselves to the French communes, in which they constitute the proletariat class. The old habits disappear, customs change, a settled life takes the place of the nomad state, the patriarchal yields to the communal system,

polygamy to monogamy. The last census for the city of Algiers returned five

Fig. 150.—An Arab Family of Tlemcen.

polygamous Musulman families, and that of Oran not more than three, so that in

this respect also the Mohammedan populations appear to be gradually conforming to the usages of European civilisation.

The social transformation now going on creates a hope that all the ethnical elements may ultimately become fused in one nationality, and that the prophets of evil may thus be belied. "All these native populations," said one of them, "must die out; those who escape one disaster will perish by another, or become infected by the contagion of our blighting civilisation. Where we pass, everything decays." The extermination of the natives might have seemed inevitable during the first decades of the occupation, when the country was wasted by razzias, when the Arab "rebels" had neither corn nor cattle; when their women, held as hostages, were bartered for live stock, or sold by auction like beasts of burden; when a price was set on heads, and human ears paid for at the rate of two douros a pair. In those days Arab prisoners acquitted by the courts were nevertheless executed, because "it was necessary to make an example;" nor were there wanting philosophers to justify any acts of injustice or cruelty against the natives. "Without violating the moral law," said Bodichon, "we can fight our African enemies with powder and the sword combined with famine, intestine feuds, brandy, corruption, and disorganisation."

No one would now repeat such sentiments in Algeria, although many acts of injustice are still committed, and the conquerors continue to abuse their power against the weak. If the natives are being crowded out in many places, the Mohammedan population still goes on increasing, slavery exists only on the verge of the desert, and the wretched Khammes peasantry have almost everywhere ceased to be true serfs, such as they were till recently on all the estates of the great feudatory chiefs. The Arab has no longer the power of life and death over his wife, whom he fears even to maltreat, lest her cries should reach the ears of some "accursed Rumi."

## Administrative Divisions.

For administrative purposes, Algeria is divided into two sections—the civil and military territory. In the former, which comprises a portion of the Tell, the officials are dependent on the Minister of the Interior, while in the latter they all belong to the military class. In the one, affairs are administered with the same routine as in France; in the other, the tribes are governed by a form of martial law. In the civil territory the three great divisions of Algiers, Constantine, and Oran are designated by the name of "departments," like the modern circumscriptions in France; in the military districts ("Territoire de Commandement") the old appellation of "provinces" has been preserved.

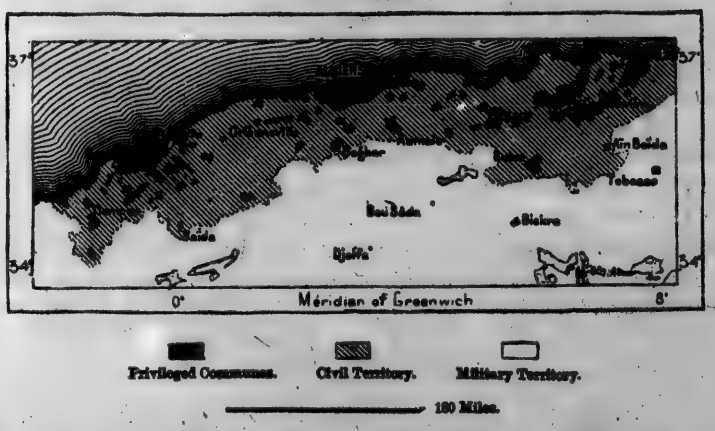
As in the mother country, the department is divided into arrondissements administered by sub-prefects. The arrondissements are again subdivided into districts, and these into communes, which for the most part are "de plein exercice," that is, fully privileged, their organisation being about the same as that of the French communes.

The mixed communes, less numerous than the others, are those in which the native element still prevails, and where the Europeans only form small groups, too weak to constitute a municipality. They are under the control of a civil administrator, who is required to speak Arabic or Berber. In the military districts, certain circumscriptions are also called mixed communes; but here Europeans and natives alike are governed exclusively by military authority, the functions of mayor being exercised by the commander-in-chief. Lastly, in the same districts a number of purely native communes, comprising dwars, ferkas, tribes, and even isolated towns, are controlled by officers of the regular army.

In 1881, there were altogether two hundred and nine communes enjoying full privileges, and this number is gradually increasing by a process of subdivision, the section demanding a municipal constitution as soon as it feels strong enough to support a separate administration. In 1884 there were seventy-five mixed communes in

Fig. 151.—Fully Privileged, Mixed, and Native Communes in Algeria.

Scale 1 : 9,500,000.



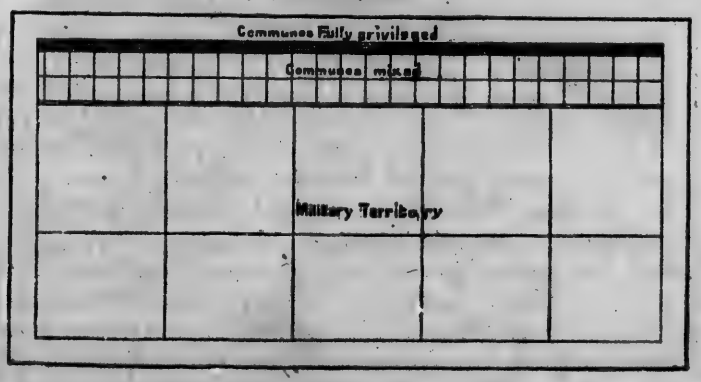

the civil, and six in the military districts, besides sixteen native communes created by the military bureaux. But these so-called native communes are sometimes vast regions, several square miles in extent. Such are those of Ghardaya, comprising the whole of the Mzab, Metlili, and Chaanba territories, with a total area of 26,700 square miles, and of Biskra, which is nearly as large again, stretching from El Kantara for 150 miles to and beyond Tugurt and Temassin, with an area approximately estimated at about 45,000 square miles. But as a rule, the larger the commune the smaller the population: that of Algiers, scarcely two square miles in extent, having at once the smallest area and the largest number of inhabitants.

In the European communes the municipal councils are elected by the suffrage of the French citizens, while each of the three Algerian departments is represented in Parliament by one senator and two deputies, elected according to the electoral

laws of the mother-country. The departments also possess a separate general council, elected in the same way as those of the French circumscriptions, and like them occupied mostly with local affairs, such as the roads and forests, public buildings, education and communal rates. Each delegates six of its members, eighteen altogether, to the Superior Council of Algeria, which al. omprises the three prefects, the three generals in command of the divisions, and the twelve members of the special council appointed to assist the governor-general. This assembly, one half of whose members are thus nominated by the Government, and the other half by the citizens indirectly, meets once a year for a session of about twenty days, to settle the current budget and the incidence of taxation. The yearly expenditure is estimated at about £1,600,000, besides over £2,000,000

Fig. 152.—Relative Population of the Algerian Communes.

Scale 1 : 10,000,000.




Each complete square represents 500 European inhabitants.

required for the maintenance of the army. The yearly income about balances the civil expenditure, representing nearly half of the whole outlay, including the military budget.

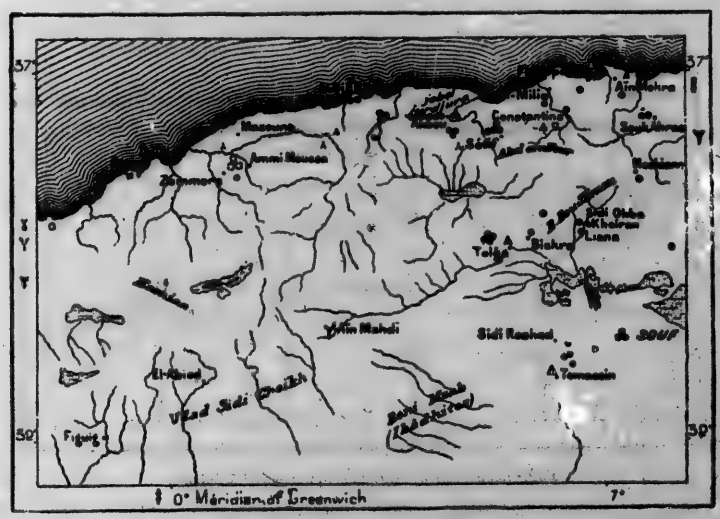
## Religion.—The Marabuts.

In Algeria the chief cause of disunion and the greatest obstacle to the fusion of all sections of the population in one nationality is religion. Before the conquest the natives had no official religious hierarchy; but after the occupation the union of Church and State was one of the very first measures introduced by the French. Immediately after the capture of Algiers the prayers read in the mosques for the head of the State were required to be modified by the imams, who henceforth pray for the "auspicious Government of France." Formerly the civil power never

intervened in the appointment of religious ministers; now the mufti, the secondary imams, and some subordinate religious agents, are selected by the governors from amongst men of letters well disposed towards the French. Not only does the administration interfere in the religious affairs of the Mussulmans by these appointments, but it also violates the constant practice of all Mohammedan societies, according to which it is forbidden to pray and teach the Koran "for wages." Hence strict Mussulmans hold in small account the salaried official priesthood, preferring to the French imams the free marabuts who pray by the

Fig. 159.—Holy Cities and Chief Religious Associations in Algeria.

Scale 1 : 9,000,000.




shrines of the saints, or the shorfa of the religious orders, who perpetuate the "chain" of teachers from the time of the Prophet.

Although unofficially connected with the French Government, the marabuts (*marâbot*) are a source of little danger to the new régime. Belonging for the most part to old families, whose genealogies go back to a remote past, accustomed to live on regular alms of the faithful, residing always in the vicinity of the holy places of pilgrimage, the marabuts are all well known to the French officials, with whom it is to their interest to live on the best of terms. Many even accept service under the Government, allowing themselves to be appointed aghas or kaids, and even intriguing for honours and decorations. Amongst the marabut tribes, one

especially, that of the Ulad-Sidi Sheikhs, was formerly nearly always hostile to France; and this tribe, residing in South Orania, far from the seaboard, naturally looked with the greatest displeasure on the advance of conquerors to whom they would have to surrender the political power and the right of levying taxes. But on the whole, the marabuts represent primarily the conservative element in religion; hence they tend to lean on the civil authorities in order to prevent the development of the religious orders, which eclipse their sanctity and diminish their income. They look on the independent associations in the same light that the Roman Catholic secular clergy formerly did the regular clergy. Cases occur of marabuts who close the doors of their schools to all students affiliated to a religious order.

### The Mohammedan Brotherhoods.

These orders, which have nearly all their origin in Marocco, communicating with that region through Tlemcen and Lalla Maghnia, are very numerous in the French possessions, and their influence has increased precisely in proportion to the favour shown by the Government to the imams and marabuts. The oldest is that of Sidi Abd-el-Kader el-Jelani of Bagdad, whose zawyas are scattered from the shores of Malaysia to those of Marocco. The Tijaniyas, whose chief centres are Ain-Mahdi and Temassin, were till recently the most powerful, and their khwans extend to the banks of the Senegal. But their influence has been impaired by the rise of the Senûsiya and some other foundations.

There can be no doubt that since the French occupation the number of khwans, a term corresponding to those of fakir and derwish in Turkey and the far East, has considerably increased throughout North Africa. It could scarcely be otherwise, for wherever men are deprived either of political freedom or of national autonomy, they endeavour to create for themselves some sphere of action impenetrable to the outer world. Here they become absorbed in religious thought, fostering their hatred against the infidel, and in the ecstasy of fanatical zeal at times breaking into open insurrection. The Rahmaniya of Kabylia and the Shadelya-Derkawa of different provinces, although most frequently persecuted by Government because of their lawless spirit, are nevertheless the two orders which have been most rapidly developed since the complete conquest of Algeria. Nor is it possible even now to ascertain their actual strength, severe military supervision having converted them into so many partly secret societies. According to Rinn, they comprised in 1881 altogether 170,000 members, of whom 96,000 belonged to the Rahmaniya confraternity. All these khwans, grouped round 355 zawyas, have nearly 2,000 mkaddems, under the orders of some twenty chiefs.

About one-fifth of the native population would appear to belong to one or other of the sixteen great Algerian brotherhoods. A number of Kabyle women are also said to have joined the religious societies in the quality of "sisters." There are, moreover, some other associations which affect a religious air, but which are merely strolling corporations of singers, dancers, snake-charmers, acrobats, and fortune-tellers.

At first sight the religious organisation of such a large section of the Mussulman population might seem to constitute a real danger for the French supremacy. A number of writers even regard these institutions as so many societies of conspirators banded together both by a common faith and hatred of their rulers. At night in the Moorish coffee-houses, after the story-telling and recitation of poetry is concluded, the khwans are said to draw near, and to utter in bated breath the prophecies foretelling the approaching advent of the Mul-el-Sâá, or "Lord of the Hour." They speak of the day when the Mussulman soil shall be cleansed from the presence of the detested Rumi, and mutually excite each other to hatred of the foreigner.

Doubtless gatherings of this sort are of frequent occurrence; but the religious brotherhoods lack the unity necessary to give consistency to these conspiracies. Certainly the various orders profess the purest orthodoxy, differing little from each other except in their formulas, genuflexions, and other outward observances. It is also true that the members of each association are mutually connected by the strictest obligations of the confraternities. But the various groups are still far from considering themselves as united in a compact body. Each order is itself split up into distinct sections, with nothing in common except the spiritual rule, and differing from each other in the conflicting interests of their several sheikhs and mkaddems. Like the marabuts, most of the latter have chiefly at heart the accumulation of wealth and increase of their personal influence. They seek to stand well with the constituted authorities, and will even occasionally favour Christians with letters of protection and diplomas of "honorary associates," entitling them to the support of the community like ordinary members. Insurrections are seldom caused by religious motives, nor have the orders ever plunged bodily into a "holy war." All the khwans seem to bear in mind the Sufi principle forbidding them "to risk death in undertakings above their strength." "Fear the French! The fear of the French is the fear of God!" said a religious sheikh to his disciples in the Khenga oasis.

Thus, however great their hatred of the invader, they have lost the warlike spirit necessary to contend with him. Compelled to absolute submission towards their chiefs, "as towards God himself," bound to dismiss from their mind "all argument good or bad, lest meditation lead them into error," their sole ambition being to impart to their limbs, their voice, and expression, the mechanical forms of the ritual, the khwans become gradually transformed to helpless imbeciles incapable of will or understanding. In reciting certain prayers the face has to be turned to the right shoulder while uttering *hi*, then to the left saying *hu*, then bent down with a *ha*. The omission of these mutterings and attitudes renders the prayer inefficacious. The history of Algeria shows that insurrectionary movements have never acquired any real importance amongst these degraded devotees, but only amongst the manly tribes which have preserved the full consciousness of their political life.

## Education.

The French Government has endeavoured to secure the support of Islam by endowing the Mussulman priesthood; but it has hitherto done little to raise the natives to the level of Europeans by education. The French schools specially opened for the Arab and Berber children are few in number and for the most part badly supported. The European schools are doubtless also open to the Mussulmans, and are frequented by a few hundred natives. But the proportion of those receiving regular instruction is very low in a population of nearly three millions. The zawyas, of which nearly one thousand are supposed to exist in Algeria, are sometimes spoken of as real schools; but they have little claim to the title, the children who frequent them, to the number of about thirty thousand, being taught little except to recite verses from the Koran. Girls are seldom admitted, nor do they enter the schools of European foundation, except in very rare cases. It could scarcely be otherwise, so long as custom requires them to marry at an age when European children are still playing with their dolls.

Amongst the Kabyles, instruction is more highly prized than amongst the Arabs, and all schools opened for them by the administration or by the Catholic and Protestant missionaries are eagerly frequented by both sexes. All the tribal assemblies have petitioned for French schools to be established in their communes, readily accepting the condition of gratuitous and obligatory instruction. Education is also held in great honour by the Berbers of the Saharian oases, and in several towns, notably Biskra, all the children already speak and write French.

Of the whole population, over a million now speak French, either as their mother tongue or as an acquired language. Arabic, notwithstanding the wealth of its former literature, no longer lends itself readily, at least in Algeria, to the requirements of modern culture. With the exception of an official journal and a few legal and administrative documents, all the local periodical literature is European, and mostly French. The only Arab works printed are translations made by Europeans, or else historical records published by the learned societies; nor has any revival of native letters made itself felt after half a century of French occupation.

Amongst the European settlers, instruction is relatively more widely diffused than in the home country. At present education is somewhat less general amongst the Jews than amongst the French, a circumstance due to the state of degradation in which the race was long held by its Mohammedan oppressors. But on the other hand, the Jews pay more attention to the instruction of their children than any other section of the community. Public instruction, on which the Algerian communes spend on an average 17 per cent. of their income, is organised on the same model as in France. According to a law of 1883, every commune is bound to maintain one or more primary schools, open gratuitously to European and native children. A school for girls must also be established in all communes with over five hundred inhabitants.

### Administration of Justice.—The Army.

In virtue of the capitulation of Algiers, the French Government is bound to permit the free exercise of the native laws and usages. Nevertheless, the local French magistrates have naturally endeavoured gradually to restrict the jurisdiction of the Mussulman courts. The kadis soon felt the rivalry of the French tribunals, to which appeal could always be made. At present the kadis, to the

Fig. 154.—Algiers in 1832.

number of about one hundred and fifty, constitute with the adels, or assistant judges, a *mahakma*, or court of justice, which in every circumscription is attached to the tribunals of first instance. Their forensic practice, while regulated by the Koran, must still adapt itself to the exigencies of the French law. The instruction given in the Medersa, or law school of Algiers, becomes daily more assimilated to that of the French legal schools; while Mussulman society is itself brought more within the reach of the French courts by the appointment of justices of the peace with a wide jurisdiction over Europeans and natives alike. Assize courts are held in the four cities of Algiers, Oran, Constantine, and Bona; and in Algiers is seated a court of appeal, the highest tribunal in Algeria.

The army of occupation, forming the nineteenth corps, comprises soldiers of all arms sent from France, besides a considerable proportion of local recruits. To these must be added three regiments of *Turcos*, or Algerian rifles, and one for Tunis, all native volunteers, mainly Kabyles and Saharians. Two regiments of the Foreign Legion are formed of Swiss, Belgians, Germans, and other Europeans, driven by want or the spirit of adventure to take service abroad. Four regiments of zouaves, including many volunteers, have been created in Algeria, besides three of spahis, or cavalry, and four of "Chasseurs d'Afrique." In the army are also

Fig. 155.—Tiaret and Tagdemt.

Scale 1 : 100,000.

3,300 Yards.

included the gendarmerie, about a thousand strong, and the Arab *gûms*, or contingents of horse equipped by the tribal chiefs.

The old Arab and Turkish fortifications have almost everywhere disappeared. The kasbahs or citadels of the strongholds have either been razed to the ground or so modified that their original form can no longer be recognised; the square bastions, with their graceful flanking towers, the imposing gateways on which were spiked "the gory heads of traitors," have left little but a name, like that of the Bab-Azun at Algiers, which the army of Charles V. failed to capture. Even the ramparts raised by Abd-el-Kader have been destroyed, and the explorer finds near Tharet scarcely a vestige of Tagdemt, at one time the central stronghold of his empire.

On the Saharian slope, where no European attack is to be dreaded, the French military posts, such as those of Biskra and Laghwat, are mere fortified barracks, or else ancient kasbahs adapted to the requirements of a French garrison. The

Saharians are the natural allies of the Europeans against the Arabs of the plateaux and of the steppes draining southwards. On the plateaux what are needed are not fortresses but carriage roads, by means of which the swiftest nomad marauders may be overtaken and dispersed. After the fall of Tagdemt and the construction of good highways from the coast to the central plateaux, the conquest of Algeria was virtually completed.

The limits of the military divisions coincide with those of the three departments of Algiers, Oran, and Constantine; but there are some differences in the administrative and military subdivisions. In each division are seated two councils of war, besides inferior courts which deal with minor offences against discipline. The Arab tribunals, which formerly depended on the military administration, have now been placed under the direct control of the governor-general.

In the Appendix will be found a table of all the administrative divisions and subdivisions of Algeria, with their chief towns and communes.

## CHAPTER X.

### MAROCCO.

THE term Marocco, given by Europeans to the triangular region bounded north-east on the Mediterranean by the Wed Ajerud, south-west on the Atlantic by the Wed Nun, is taken in a far more restricted sense by the natives, for whom Marrakesh, the Marruecos of the Spaniards, is one only of the three states subject to the sultan-sherif. His empire is completed in the north by the kingdom of Fez, in the south-east by the Tafilelt oasis, while vast districts occupied by numerous independent tribes are also comprised within the space usually designated on our maps by the appellation of Marocco. The inhabitants have no common term for the whole of this region, which in many places has no definite frontiers, and which is vaguely designated Maghreb-el-Akss, "The Extreme West."

But notwithstanding its uncertain nomenclature, Marocco constitutes none the less a distinct geographical unit. A certain physical unity is imparted to the whole of the region comprised between Algeria and the Atlantic by the lofty Deren ranges, with their parallel foldings, spurs, and valleys merging in the lowland plains which stretch on the one hand seawards, on the other in the direction of the Sahara. The absence of political cohesion is also compensated by a common faith, while the very rivalries of foreign powers, especially England, France, and Spain, serve to impart to the whole of Marocco a certain solidarity, by isolating it from the rest of the continent.

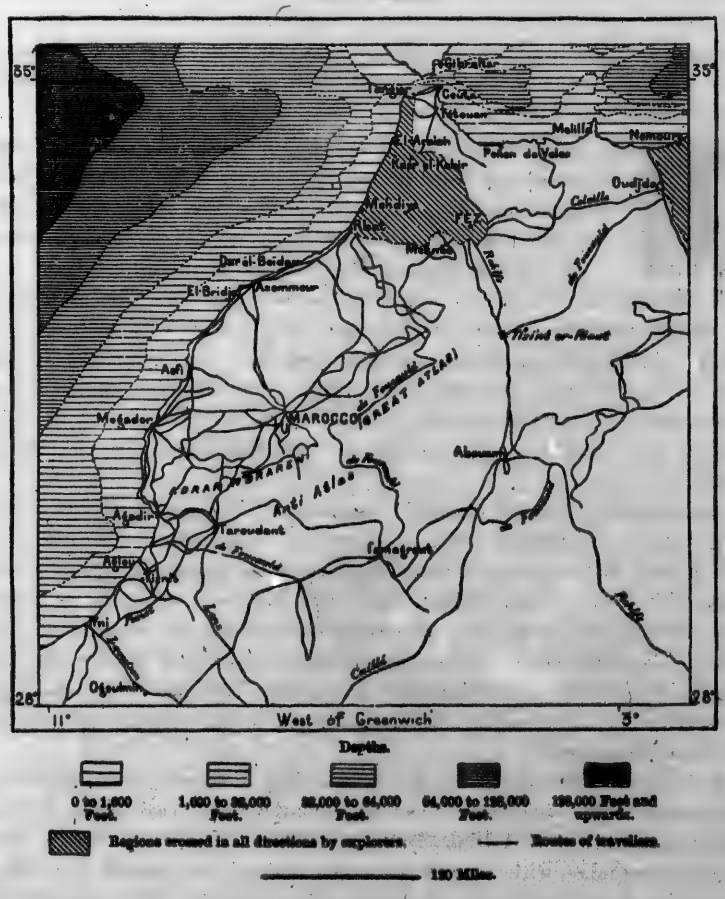
Within its conventional limits, as determined by diplomacy, the region defined south-westwards by a straight line running from the Figuig oasis across the desert to the mouth of the Wed Draa (Draha), may have a superficial area of about 200,000 square miles, with a scant population, which in the absence of all official documents can scarcely be even approximately conjectured. The estimates vary from Klöden's 2,750,000 to Jackson's 15,000,000, the actual number being, perhaps, between eight and nine millions.

Marocco has not yet been thoroughly explored by European travellers. For three centuries the published accounts of the country were little more than reproductions of the work written by the Arab renegade, Leo Africanus. Till the

end of the last century, the only Europeans who penetrated into the interior were a few missionaries sent to redeem captive Christians, some mariners wrecked on the coast, or envoys to the Sultan's court. But in 1789 the country was traversed by Lemprière, who was followed at the beginning of the nineteenth century by the Spaniard, Ali-Bey. Since then many journeys have been made along the routes

Fig. 156.—Routes of the Chief Explorers in Morocco.

Scale 1 : 9,000,000.




between Tangier, Fez, Meknes, and Rhat, and between Mogador and the city of Morocco.

These itineraries indicate with tolerable accuracy the limits separating the Bled-el-Makhzen, or settled region, from the Bled-el-Siba, or independent districts held by tribes who refuse to pay the imposts or accept military service. In the

Bled-el-Makhzen Europeans travel in perfect safety, without being compelled to disguise their origin. But they could scarcely venture to penetrate openly into the regions occupied by the independent tribes, regions comprising about five-sixths of the territory on our maps designated by the name of Marocco. The inhabitants of the Bled-es-Siba have, perhaps, good reason to believe that the

Fig. 157.—Bled-el-Makhzen and Bled-es-Siba.

Scale 1 : 9,000,000.

exploration of their domain by Christian travellers would be followed by conquering armies advancing along the routes thrown open by their peaceful forerunners.

Amongst the districts that have hitherto been scarcely visited is the Rif coast, which is nevertheless yearly skirted by thousands of ships plying east of the Strait of Gibraltar. Even on the direct route between Fes and Marocco, many hilly tracts are known only from the reports of the natives. The Atlas, the Anti-Atlas,

and all the land draining to the desert, as far as the Algerian frontier, have hitherto been traversed only by two or three Europeans. Of Caille's expedition little is known beyond its approximate line of march; Rohlfs merely skirted on the north the main Atlas range, which Lenz crossed at its southern extremity. But De Foucauld, disguised as a Jew, penetrated much farther inland, surmounting the Atlas at several points, discovering the Bani range, determining over forty astronomic positions and three thousand altitudes. But a detailed account of his explorations, with the maps and other documents embodying the result of his surveys, still awaits publication.

### The Atlas Highlands.

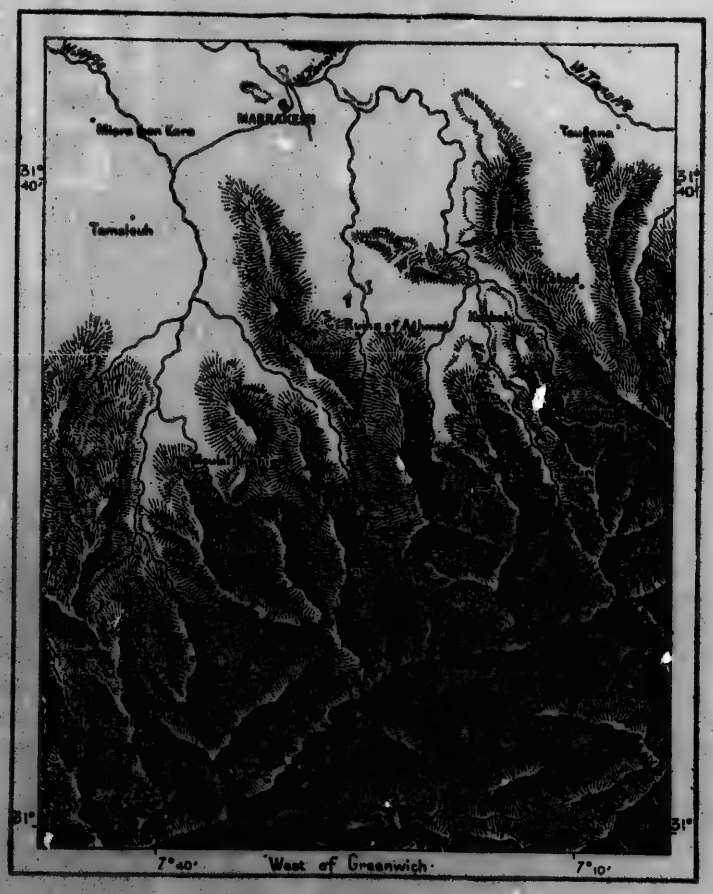
In Morocco the Atlas system attains its greatest elevation. Here the main range runs south-west and north-east, following the axis of north-west Africa from Cape Blanc through Cape Bojador to the headland of Algiers. The whole coast region between the mouths of the Sûs and Moluya lies, so to say, beyond the continental mass dominated by uplands already belonging to the intermediate zone now pierced by the Strait of Gibraltar. The range deviates slightly from the normal north-easterly direction, developing a sort of arc, with its convex side turned towards the Sahara. Excluding the subordinate ridges and those continuing the system in Algeria, it has a total length of about 360 miles between Cape Gher north of the Sûs and the Jebel Aïashin, forming its extreme north-eastern ramification. No collective name is applied to the system by the natives, who restrict the general term Idraren, or "Mountains," or Idraren Deren, to its western section. The word Deren is evidently the same as the Dyris or Dyrin known to Strabo.

The Jebel Aïashin (Aïashi) appears to be one of the loftiest chains in Morocco. According to Rohlfs and De Foucauld, the only modern explorers who have yet described this part of the Atlas, its summits are distinguished from all the surrounding crests by their snowy whiteness. Rohlfs even confirms the statement of the Roman general, Suetonius Paulinus, that they are covered with perpetual snows. But he visited these uplands in the month of May, and the natives questioned by him may have spoken of the snows which remain in the crevasses and ravines impenetrable to the solar rays.

But however this be, the Jebel Aïashin, or Magran, as it is also called, probably rises to a height of 11,600 feet, being surpassed in elevation only by a few peaks in the main range. It is composed chiefly of sandstones and schists, and throws off some lateral ridges, constituting parting lines between several river basins. Westward stretches the Aït-Ahia, continued through the Aïan and the rocky spurs which rise above the plains of Fez. To the north-east the Jebel Tamarakuit, a branch of the Aïan, follows the normal direction of the Atlas system. One of its depressions is flooded by the lovely alpine lake Sidi Ali Mohammed, in whose clear waters are mirrored the wooded slopes of the surrounding hills. The Tamarakuit is continued north-eastwards by a range, which is pierced by the Moluya and

Sharf rivers, and which terminates in Algeria in the Tlemcen mountains. The Jebel Aïashin itself falls rapidly northwards, terminating abruptly in the stupendous cliffs of the Jebel Terneit, which rises nearly 7,000 feet above the surrounding plains. This imposing rampart, forming the northern extremity of the whole

Fig. 158.—Chiefs and Passes of the Atlas south of Marrakesh.
Scale 1 : 730,000.




system, presents a striking contrast to the boundless plateaux, which here appear to have been gradually levelled by the action of the streams and glaciers formerly descending from the Atlas.

South of the Jebel Aïashin the main range, still unvisited by any European

explorers, seems to maintain a mean altitude of over 11,600 feet. According to

Fig. 159.—Jebel Tea—View taken from the Tagherot Pass.

Foucauld, there is not a single pass accessible to caravans for a distance of 90 miles

to the south of the hills which skirt the northern face of the Aïashin on the route from Fes to Tafilelt. But farther on towards the south-west, occur several breaches affording communication between the Um-er-Rbia and Draa basins. Of these the most important are the three Tizi n'Glawi passes between the Jebel Aniemer and the Jebel Tidili, which are practicable throughout the year.

South-west of this depression rises the imposing mass of the snowy Jebel Sirwa, which is probably the culminating point of the Atlas system. Standing somewhat beyond the main axis, it forms a connecting link between the Great and Little Atlas, and separates the two basins of the Sûs and Draa. The Mount Miltsin, surveyed in 1829 by Washington, no subsequent traveller has been able to identify by that name, which appears to be unknown to the natives. According to Ball and Hooker, it refers perhaps to a mountain 36 miles south-east of Marrakesh, whose highest peak may be about 13,200 feet. Seen from the capital, the chain of the Atlas presents the aspect of an almost unbroken rampart covered with snow till the early summer. According to Maw, the mean altitude in this section is about 13,000 feet, the highest peaks rising scarcely more than 600 feet above this median line. Thus the Atlas is much inferior in extreme elevation to the Alps, although for a space of at least 100 miles it maintains a mean height greater than that of any of the Alpine ranges.

The Tagherut Pass, about the meridian of Marrakesh, leading southwards to the Upper Sûs Valley, stands at a height of perhaps 11,600 feet, and is approached by rugged gorges presenting great difficulties to pack animals. But 18 miles farther west a large breach presents an easy passage to caravans. From the summit of the pyramidal Jebel Tisa, which attains an altitude of over 11,000 feet, a view is commanded of this narrow defile, above which it towers to a height of 4,000 feet. West of this point the main range, here running perpendicularly to the coast, still maintains an average altitude of 10,000 feet, as far as another deep gorge known as the "Tizi" or "Pass," in a pre-eminent sense, which is crossed at an elevation of 4,000 feet by the route leading from Morocco to Tarudant in the Sûs Valley. This pass, which also takes the name of Bibawân and Bibân, or the "Gates," has been traversed by Lemprière, Jackson and other explorers. Beyond it the maritime Atlas still presents a superb aspect, with peaks exceeding 8,000 feet.

As far as is known of its geological constitution, the Atlas consists largely of sandstones, together with old schists, limestones, and marbles, while porphyries seem to prevail in the central parts of the Deren range. Diorites and basalts occur in several places, and the Jebel Tisa, ascended by Ball and Hooker, forms a porphyry dome, which has cropped out through the mica schists. The character of the rocks in the main range is revealed chiefly by the débris scattered along its slopes, and which, according to Maw, are of glacial origin. At elevations of from 6,000 to 8,000 feet, the valleys sloping towards the Atlantic are filled with lateral, median, and terminal moraines, apparently differing in no respect from those of the Alps. A series of hills composed entirely of glacial débris also occurs at the foot of the mountains, where they occupy a broad zone interrupted at intervals by the lateral valleys.

A similar glacial origin is attributed to the undulations on the great plateaux stretching east of the Atlas along the axis of the orographic system in the province of Oran. A portion of this plateau is filled by the shott or sebkha of Tigri, which is strewn with a reddish argillaceous deposit. This shott does not form a single basin, but is divided into several secondary depressions standing at different levels between the altitudes of 3,700 and 3,800 feet.

The greatest contrast is presented by the two slopes of the Atlas. The declivity exposed to the moist clouds of the Atlantic is covered here and there with verdure, and in some places, especially towards its northern extremity, clothed with magnificent forests. But the opposite side, facing the desert, is both much steeper and more arid, presenting the aspect of bare rocky surfaces burnt by the parching winds coming up from the sands. Yet the southern escarpments are almost everywhere protected from these winds by a lower parallel chain, usually designated by the name of the Little Atlas, or Anti-Atlas.

## The Little Atlas and Bani Ranges.

In its western section, south of the Wed Sûs, the Anti-Atlas, seen by Ball and Hooker from the summit of the Jebel Tisa, seemed to have an elevation of about 10,000 feet. But Rohlfs, who crossed it on his journey from Tarudant to Tafilelt, gives it a mean altitude of not more than 5,000 feet, or about half that of the Great Atlas. Towards the east it is known to the natives by the name of the Jebel Shagherun.

A broad and apparently perfectly level zone separates the Little Atlas from another ridge running parallel with the main axis of the system. The Bani, as this ridge is called, rises little more than 500 or 600 feet above the surrounding plains, with a thickness of about a mile from base to base. The Bani, which is destitute of lateral chains or spurs, is said to begin near Tamagurt, on the Draa, and to run north of that river almost in a straight line for a distance of nearly 360 miles to the Atlantic. It is pierced at intervals by *khenegs*, or defiles, usually very narrow, above which five or six streams converge in a single channel, through which the waters of the Little Atlas find their way to the Draa. One of these khenegs is regarded by the Berbers as the cradle of their race, and here they assemble every year to offer sacrifices, followed by feasts and dancing.

Throughout its entire course the bare rocky mass of the Bani range consists of a sandstone, charred in appearance, and covered with a bright black incrustation. This sandstone is probably of Devonian origin, like the blackish sandstones of the Central Sahara, and like them it is sometimes polished, sometimes striated or grooved, effects due to the incessant action of the sands. Between the Bani and the Draa Valley occur here and there certain rocky protuberances, to which the natives give the name of "snakes," from their serpentine appearance when seen from a distance. Like the Bani, they are all disposed in the normal direction of the Atlas system, from south-west to north-east.

East of the Wed Draa stretches a hilly region, which forms a continuation of the South Oran border ranges. Some of the crests assume the fantastic forms of crenellated walls, towers, or pyramids. Between Figuig and Tafilelt, Rohlfs observed one so like the nave of a church flanked with its belfry that for a moment he believed himself the victim of an optical delusion.

West of the Great Atlas the secondary chains are no longer disposed in the direction of the main axis, but branch off irregularly towards the coast. One of these, beginning at the Bibawan Pass, near the western extremity of the Atlas, attains in some of its peaks heights of over 3,300 feet, and under the name of the Jebel Hadid, or "Fire Mountain," falls down to the coast between Mogador and the mouth of the Wed Tensift. Over the district between Mogador and Marocco are also scattered isolated tables, like those in Eastern Mauritania, between Ghadames and the Mzab, all at the same level, and evidently the remains of an older surface layer broken into detached fragments by atmospheric agencies.

But while some rocky formations thus become weathered, others continue to grow, probably under the peculiar action of rain water. The plain of Marocco is in this way covered with a crust of tufa, which fills up all the irregularities of the surface, varying in thickness from a few inches to three feet, and in many places presenting the appearance of agate. Such is its consistency, that by excavating the earth beneath it, the natives are able to form caves, or *matamoras*, as the Spaniards call them, in which cereals and other provisions are preserved. On the Marocco coast fragments of lavas and volcanic ashes are also found enclosed in rocks of recent formation. These débris had their origin perhaps in the craters of the Canary islands, whence they were wafted by the trade winds across the intervening marine strait.

### The Jebel Aïan and Beni Hassan Uplands.

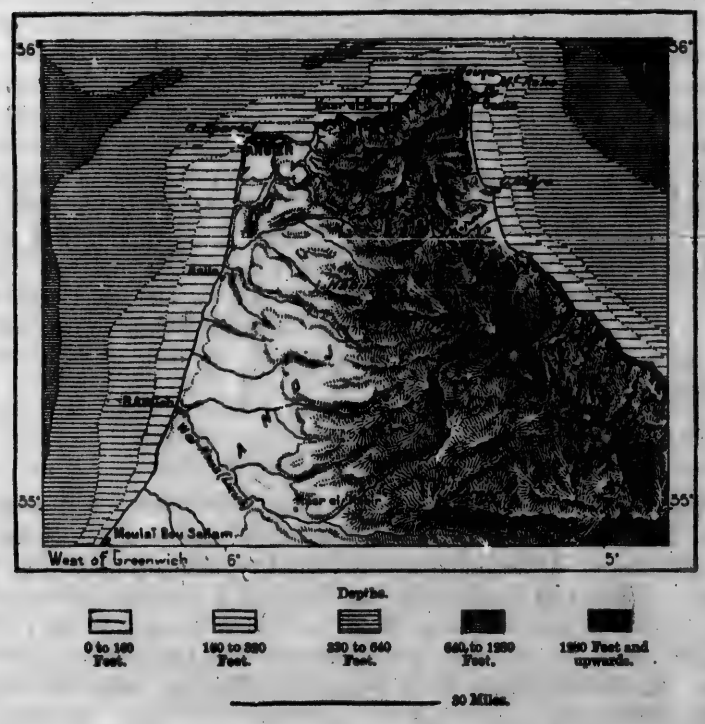
Of the lateral ridges branching from the Great Atlas on the Atlantic slope, the loftiest and most extensive is the Jebel Aïan, which takes its origin towards the northern extremity of the main range, and which separates the Upper Sebu from the Upper Um-er-Rbia Valley. The Jebel Aïan, which is often covered with snow, forms the central nucleus whence ramify the various branches of these almost unknown uplands. None of the heights have yet been measured, and the whole region is held by independent Berber tribes, who neither pay tribute nor military service to the empire.

North Marocco is occupied by mountain masses indirectly connected with the Atlas system. On the one hand the Wed Sebu, flowing to the Atlantic, on the other the Moluya, a tributary of the Mediterranean, enclose with their several affluents a quadangular space, in which the ridges are not disposed in the normal direction of the general orographic system. A depression, probably about 1,000 feet high, separates the two regions on the route from Fez to Tlemcen, a great part of the intermediate space being occupied by hills of reddish argillaceous formation.

All these uplands, in which the older rocks seem to prevail, descend towards the Rif, that is, the "coast," developing a vast semicircle of hills from the Tres Forcas headland to Point Ceuta. The central mass takes the name of Sanejat-Serir, and on the coast the loftiest summits are those of Beni-Hassan, west of Tetuan. The Beni-Hassan, whose culminating point is over 6,600 feet, is continued southwards through the Mezejel, the Jebel-el-Kimsa, and the Zarzar, whose conic summit rises above the town of Wezzan. The whole system produces an imposing effect, resembling a number of Rocks of Gibraltar placed side by side on a common

Fig. 160.—The Tetuan Highlands.

Scale 1 : 1,200,000.




pedestal. The running waters, grassy tracts, wooded and cultivated slopes, render this angle of the continent one of the most delightful regions in Mauritania, forming in this respect a striking contrast with the arid and rugged escarpments of the Rif, which stretches thence eastwards.

The hills skirting the strait over against Gibraltar, although lacking the elevation, majestic appearance, and rich vegetation of the Beni-Hasan highlands, acquire great importance from their position along this great maritime highway.

The border chain of the Jebel Haûz terminates northwards in the Jebel Belliuneah, the Sierra de Bullones of the Spaniards, which is identified as the Septem Fratres ("Seven Brothers") of the ancients. Towards the east this mass develops the narrow peninsula which is connected by a fortified isthmus with the isolated bluff of Ceuta; on the other hand it projects northwards to form the Jebel Muça headland, which is the southern of the two "Pillars of Hercules." This southern pillar, the Abyla of the ancients, is scarcely less imposing than the Rock of Gibraltar, and is even of greater height (2,850 feet). But a nearer view shows that it is a shapeless mass, a chaos of rocks, offering a retreat to wolves, wild boars, and monkeys. The term "Elephant Mountain," applied to it by Strabo, is justified by the appearance it presents when seen from a distance. At the same time, the forests which flourished in this region of the continent eighteen hundred years ago, were, according to Pliny, still frequented by elephants.

West of the Mons Abyla other crests follow along the narrowest part of the strait. But beyond Cape Ciris the coast begins to trend southwards through a series of curves separated one from the other by the detached headlands of the Jebel Haûz. Beyond the cliffs of Tangier the coast-line again abruptly turns southwards. Above the cape forming the north-western angle of the continent, the headland of Spartel, or Ishbertil, the Tarf-esh-Shakr of the natives, rises to a height of 1,040 feet. Cape Spartel is the ancient promontory of Ampelousion, or "Vine Point," and this district still yields the best grapes in Marocco. The neighbouring town of El-Araïsh has for its coat-of-arms bunches of grapes, which a man is lifting with an effort. One of the caverns in Cape Spartel excavated by the surf was formerly dedicated to Hercules, and near it stood the tomb of Anteus. Thus was symbolised the struggle between the blind forces of nature and the triumphant genius of man at this "land's end," where vessels sailing westwards entered on the trackless ocean.

For a distance of over 360 miles, between Cape Spartel and Mogador, the Atlantic seaboard almost everywhere presents a low surf-beaten beach, which is carefully avoided by mariners. The shallow waters extend seawards for over 30 miles, where the plummet first reaches depths of 660 feet. Along the coast the highest headland is that of Cape Cantin, whose alternating layers of grey and red marls, limestones, and ferruginous clays, terminate here in vertical cliffs, elsewhere in irregular step formations. Signs of upheaval have been observed at various points, and an old beach containing deposits of shells runs along the coast at a mean height of 65 feet above the present sea-level. But according to some authorities, the opposite phenomenon of subsidence has been noticed, at least at Mogador.

### Rivers of Marocco.

Enjoying a more copious rainfall than the rest of Mauritania, Marocco is able to send seawards a larger number of rivers, some of which, although reduced by evaporation and irrigation works in their lower course, retain a larger volume than

any in Algeria. According to Ball and Hooker, the mean discharge of all the

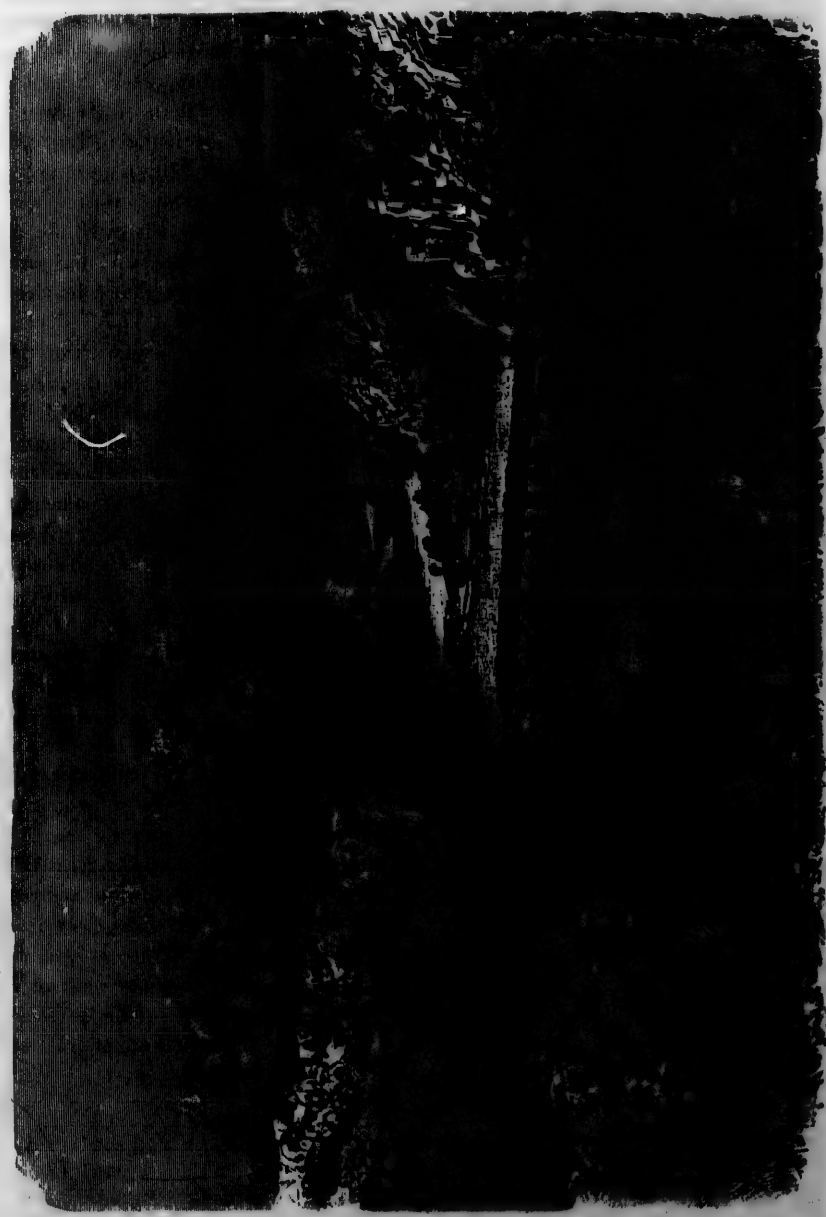


Fig. 161.—The Shellif River.

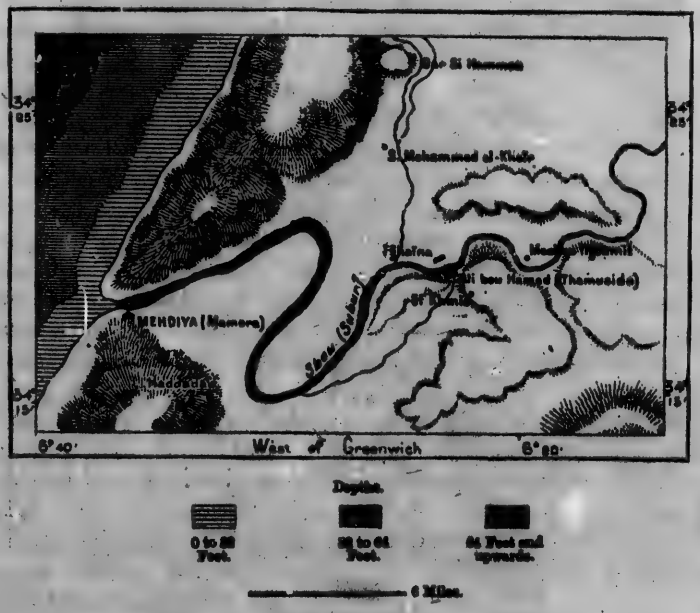
streams flowing from the Atlas to the Atlantic is about 7,875 cubic feet. Yet some

of the wadies are of any use for navigation, the only craft plying on them being ferryboats of a very primitive type.

On the Mediterranean slope the chief river is the Moluya (Muluya), which has its source amid the snows of the Aïashin mountains, and is farther down swollen by the Wed Za and other tributaries from the east. The Moluya (M'luya) is the Molochat, Malua, or Malva of the ancients, who regarded it as the natural frontier between the two Mauritanias (Mauritania Tingitana and Cæsariensis). During the Berber and Arab epochs, down to the year 1830, it also formed the boundary between Algeria and Marocco; but the political frontier having been shifted east-

Fig. 182.—Lower Course of the Sebu.

Scale 1 : 400,000.



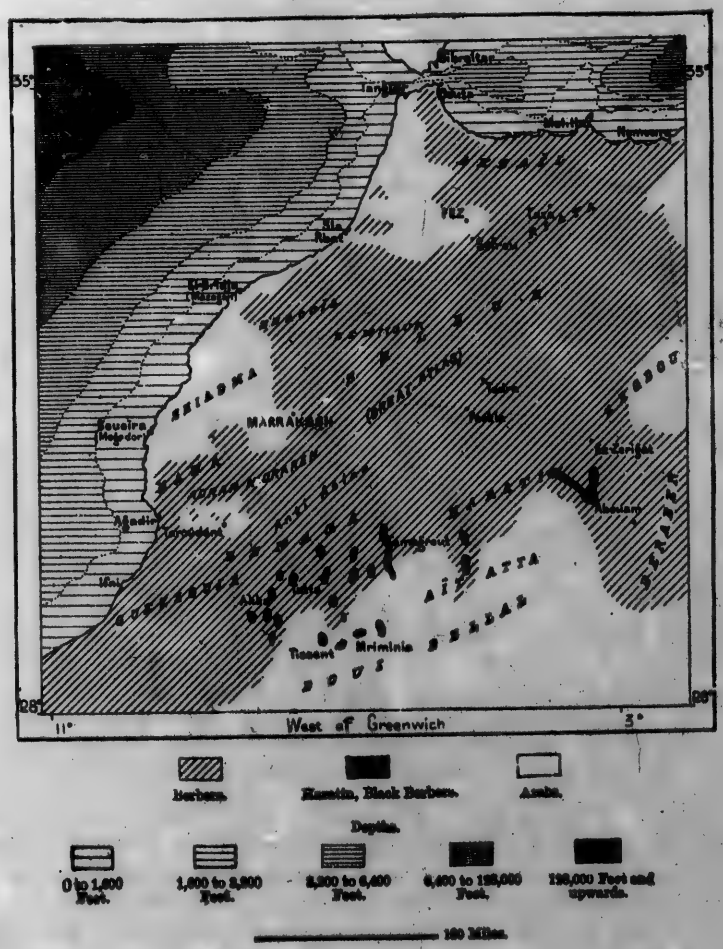

wards by the treaties of Tafna and Tangier, both banks of the river are now included in Marocco territory. Its mouth is sheltered on the north-west by the Zaffarine islets, so called from the Beni-Jafer Berber tribe, which at some distance from the coast form a sort of semicircular breakwater, behind which vessels ride in safety during the prevalence of the fierce north-east gales.

Farther west the Rif seaboard presents nothing but small coast streams, such as the Wed-esh-Sherat, which reaches the sea near Tangier. On the Atlantic slope the first important stream south of Cape Spartel is the Wed-el-Khus, which has its rise in the western escarpments of the Beni-Hassan highlands, and reaches the sea some 36 miles south of the Strait. From this point the monotonous coast-

line continues to run in a south-westerly direction to the mouth of the Sebu, the Sebur of the Phœnicians, the largest river in Morocco, and next to the Nile the most copious in North Africa. Having a width of from 400 to 1,000 feet, and a

Fig. 163.—Arabs and Berbers of Maghreb-el-Aksa.

Scale 1 : 9,000,000.


35°
35°
Gibraltar
Tangier
Ceuta
Melilla
Algeciras
Tetuan
Rif
Taza
Fez
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Mequinez
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Casablanca
Mazagan
Saffi
Mogador
Agadir
Tarudant
Mesa
Akka
Tisint
Tekna
Wad Nun
Tarfaya
Mogador
Essaouira
Marrakesh
Tedla
Beni Mellal
Azrou
Mequinez
Fez
Taza
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regular trade route to be established along the course of the river, which nevertheless waters one of the most productive regions in Marocco. The main stream forms the natural highway of communication between the Atlantic seaboard and the Moluya, draining to the Mediterranean, and in the fertile plains watered by the Sebu is situated Fes, the first city in the empire. Travellers following the coast route from Tangier to Mogador cross the Sebu by a ferryboat of primitive structure, which does not relieve them from the necessity of wading through the mud. The tides ascend a long way up the lower course of the Sebu.

About 18 miles south-west of the Sebu, the Bu-Regrag reaches the Atlantic through a rocky channel excavated in the slightly elevated plateau. This river rises, not in the Great Atlas, like the Moluya, Sebu, and Dra, but in the advanced hills skirting the Fes territory on the south; and although scarcely more than 120 miles long, it takes the foremost position in the political geography of the country; for it forms the frontier line between the two kingdoms of Fes and Marocco, and near it stood the outpost of Ad Mercurios, which marked the utmost limit of the Roman province of Mauritania Tingitana.

The Um-er-Rbia, or "Mother of Pastures," so named from the rich grazing-grounds skirting its banks, is said by Renu and Hooker to be the most copious stream in Marocco. During the dry season it is fordable at many points; but in the rainy season travellers are detained for weeks on its bank, waiting the subsidence of the floods to cross over. For a space of about 120 miles, between the mouths of the Um-er-Rbia and the Tensift, no other watercourse reaches the sea. Nor is the Wed Tensift itself one of the great rivers of Marocco, although the city of Marocco lies in its basin. Here the rainfall is far less abundant than in the northern provinces, and in summer the mouth of the Tensift is completely closed by the sands at low water.

The Wed Sûs, the Subus of the ancients, which takes its rise between the Atlas and Anti-Atlas, is also an intermittent stream, flooded in winter, and throughout its lower course almost completely dry in summer. When crossed by Lens in March, below Tarudant, some 60 miles above its mouth, it was a mere rivulet 10 or 12 feet wide and less than 2 feet deep. The Wed Assaka, which skirts the southern foot of the Atlas, is also mostly dry, explorers often finding nothing but sand in its bed.

Even the Wed Dra, by far the longest river in Marocco, is much inferior in volume to the Moluya, Sebu, and Um-er-Rbia, and seldom reaches the Atlantic. Its chief headstreams rise in the snowy cirques of the Great Atlas, and for a distance of about 180 miles, from the Idraren Deren to the Aïashin range, all the streams on the southern slope of the main range flow towards the Dra, which escapes southwards through a series of gorges in the Jebel Shagherun. For a space of 600 miles below the gorges its volume constantly diminishes, absorbed partly by the arable lands along its banks, partly by evaporation and infiltration in the sands. After emerging from the upper gorges, it flows at first southwards, skirted on both banks by a strip of palm groves, varying in breadth from 500 yards to nearly 2 miles. But after skirting the eastern extremity of the Bani range and

the parallel "snake" ridges, the Draa, exhausted by the irrigation canals branching right and left through the plantations, is no longer able to maintain a regular course. It spreads out in the vast Debaya depression, which is alternately a lake, a swamp, and a watery plain, on which crops of cereals are raised. Below this depression it trends towards the south-west, here flowing between high banks, and receiving a number of intermittent torrents from the Anti-Atlas. But when these tributaries run dry, no surface water is left in its lower course, although, according to local tradition and historic records, it formerly reached the sea through a broad and permanent estuary. At that time crocodiles and hippopotami frequented its waters, and elephants roamed in herds over the riverain forests.

The stream, which under the names of Wed Zis and Wed Guers, flows due south from the northern extremity of the Great Atlas, after watering the Tafilelt oases, 150 miles from its source, runs dry in the sands of the desert. No traveller has yet ascertained whether its bed is continued southwards across the great dunes trending west towards the Draa, or east to the Messawara basin, or continuing an independent course in the direction of the Niger. The Wed Guir hydrographic system, which begins in the last cirques of the Great Atlas immediately east of the Wed Zis, is better known in its upper course, thanks to the numerous expeditions made in this direction by the French forces, and to the reports of pilgrims and traders. After receiving the streams flowing from Figuig and from the Ish district on the Oran frontier, the Guir flows under various names in the direction of the Twat oasis. But beyond this point it is unknown whether it joins the Draa, loses itself in a land-locked basin, or effects a junction with the Niger towards the western extremity of its great bend towards the north.

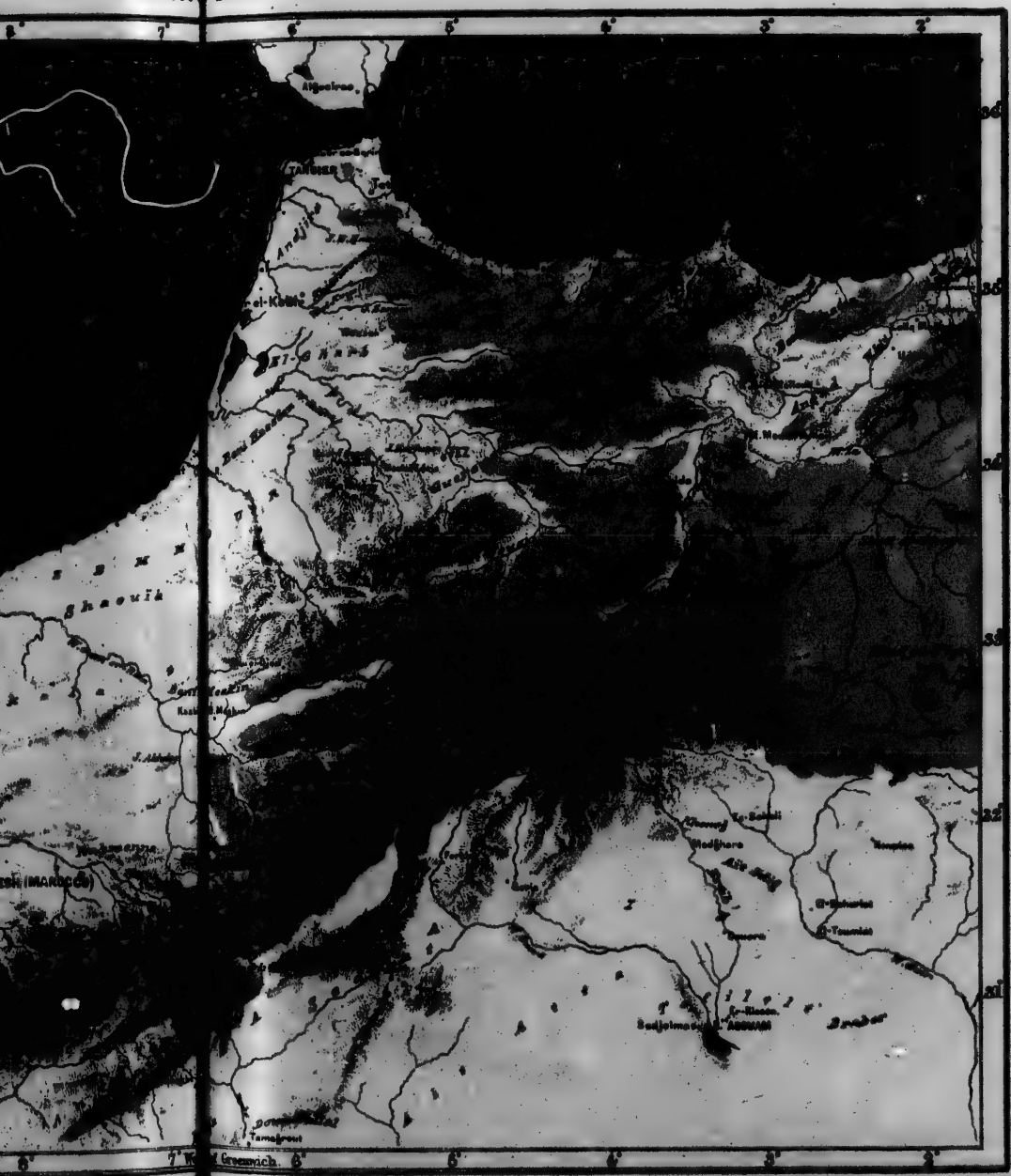
## Climate of Marocco.

Marocco is entirely comprised within the zone of the trade winds; but the normal play of the atmospheric currents is modified by the Atlas highlands, by the position of the country at the entrance of the Mediterranean, and the neighbourhood of the Sahara. In summer the land and sea breezes alternate daily along the coast, while the prevailing winds come from the south. In winter, that is, from October to February, north-west winds are very frequent, bearing with them a considerable amount of moisture, which is precipitated in abundant showers on the slopes of the Atlas. But throughout the southern regions the trade winds are predominant. As these blow parallel with the axis of the main ranges, the aerial current follows, so to say, a channel already created by the Atlantic slope of Mauritania. For about two hundred and seventy days in the year the polar winds from the north and north-east prevail at Mogador; while for nearly two months, usually in winter, the opposite currents from the west and south-west descend from the higher to the lower atmospheric regions.

Under the influence of the trade winds and marine breezes, the climate of the

MARRAKESH (MAROCCO)

MAROCCO.




NEW YORK, D. APPLETON & CO.

Atlantic seaboard is generally distinguished by an almost complete absence of extreme variations. Few points on the surface of the globe enjoy a more uniform temperature than Mogador, where th oscillations recorded during a series of nine years scarcely exceeded 6° or 7° F. This remarkable equability explains the rarity of diseases of the chest. Consumption is almost unknown in this part of the continent, whose climate is also found to be highly beneficial to European invalids.

In the interior, where the marine breezes are but slightly felt, the variations of temperature increase in proportion to the distance from the seaboard, while on the south coast the climate is influenced by the proximity of the Sahara with its intense heats during the day and active radiation at night. Altogether, Marocco is disposed in three climatic zones by the relief and aspect of the land. In the north the Moluya basin, the Rif, and peninsula of Tangier, belong to the Mediterranean Tell, presenting nearly the same phenomena as the corresponding parts of Algeria; in the centre and south, the main Atlas range separates two distinct regions, one exposed to the Atlantic, the other to the Sahara atmospheric influences.

The rainfall is on the whole far more abundant than in Eastern Mauritania, and the Atlas highlands are often visited by heavy snowstorms. Everywhere along the seaboard the atmosphere is saturated with moisture; but showers are rare on the southern slopes turned towards the Sahara. The coastlands are also frequently visited by those showers of red dust, which are now known to consist mainly of silicious animalculæ wafted by the trade winds from the South American llanos across the Atlantic.

## Flora.

To the varied climate of Marocco corresponds a no less diversified flora, which, however, belongs mainly to the Mediterranean zone. Of the 248 local genera, all, with a solitary exception, are found in one or another of the regions bordering the great inland sea. Fully a third of the species occur even in the British Isles and Central Europe. On the other hand, very few species are common also to the African floras south of the great desert. Thus in the products of its soil, no less than in its physical constitution, Western Mauritania maintains its European character. Physical geography was consequently in complete harmony with the political divisions when Mauritania Tingitana was by Diocletian attached to the Iberian peninsula.

The vegetation of Marocco most resembles that of Spain, although the analogy is not so complete as was at one time supposed by botanists. Of 631 species collected in the Atlas highlands, as many as 181 are not found in Spain, and the divergence increases as we ascend towards the higher regions of the Atlas. The contrast with the Canaries, Madeira, and the Azores is almost complete. Most of the plants common to the islands and mainland are such as are elsewhere also found diffused throughout vast regions with the most varied climates. Of the 1,627 flowering plants hitherto enumerated in Marocco, not more than fifteen

belong also to the archipelagoes. Thus the botanical evidence alone suffices to show that, notwithstanding their proximity to the mainland, the Canaries are of independent origin.

Rather more than ten of its vegetable species are altogether peculiar to Morocco, and are mostly confined to the Atlas uplands. In this central region the few indigenous species have become specialised by the process of gradually adapting themselves to the environment. Towards the summits of the Atlas have also taken refuge the European species, which appear in isolated groups on the crests of the Ethiopian ranges. Such is a variety of the pine, which emits a pleasant odour, and which is employed in the manufacture of costly cabinet pieces. On the other hand, many of the Sahara species have penetrated far northwards, being found not only on the southern slopes of the Anti-Atlas, but also in the Sûs basin and along the seaboard as far as the Wed Tensift. Such are the gummiferous acacias and several large euphorbiæ, also yielding valuable gums. The date-palm, which may be included in the number of tropical species that have migrated northwards, grows in the Tangier district on the Mediterranean coast, but bears no fruit, and even at Mogador the crop is of inferior quality. But the dates of the Draa basin are said by the natives to be unrivalled in flavour even by those of the Jerid oasis itself. The dwarf-palm, so common in Algeria, is somewhat rare in Morocco, being found in thickets only in the province of Haha, round about Mogador.

One of the most remarkable of the indigenous species is the *argania sideroxylon*, a tree which has often been compared to the olive, and which is found only in the southern districts beyond the Wed Tensift. It grows in the most arid soil, and needs no irrigation. All domestic animals except the horse and ass eat its berries eagerly, while from the kernel the natives extract a peculiar oil, disagreeable to the European palate. Its wood is extremely hard, and but for its excessively slow growth the argania, of which mention is first made by Leo Africanus, might be successfully cultivated in Algeria. Another indigenous plant, found nowhere else, and described by Jackson and Leard, yields the gum "ammoniac" of commerce —a resin with a pungent odour, used in Egypt and Arabia for the purpose of fumigation.

## Fauna.

The Morocco fauna differs little from that of Algeria, at least so far as it has hitherto been studied. Large carnivora, such as the lion and panther, appear to be confined mainly to the Rif highlands, towards the Algerian frontier. The bear, extinct in Algeria, has not yet disappeared; rabbits swarm in the Tangier peninsula, diminishing gradually southwards to the Bu-Regrag, beyond which they are not found. Monkeys are rare, being restricted to the northern regions and to the single species which survives also on the Rock of Gibraltar. Wild boars, justly dreaded by the peasantry, infest all the thickets. The better classes have the curious practice of keeping them in their stables, in order to conjure the evil spirits, and induce them to pass from their horses into the "impure animal." In

the southern steppes on the verge of the desert, the ostrich still abounds, and here also several varieties of the gazelle are hunted, less for their flesh than for the so-called *besoard*, a peculiar concretion often found in their stomachs and valued as a powerful amulet. The dead cetaceans stranded on the coast are also opened by the fishermen in search of fragments of grey amber.

The upland valleys of the Atlas range, with its almost European climate, are well suited for breeding all our domestic animals, as well as for the cultivation of all the plants peculiar to the temperate zone. The waters abound in turtles, and the river estuaries are frequented especially by the sabal, a species of salmon, highly prized for its delicate flavour. The oceanic fauna differs in other respects little from that of the West Indian seas, the nautilus, flying-fish, and much-dreaded hammer-headed shark being found on both sides of the Atlantic. The exploration of the abysses off the Morocco coast, sounded to a depth of 2,800 fathoms, has revealed to the naturalists of the *Talisman* a multitude of new species of fishes, crustaceans, molluscs, worms, and sponges.

## Inhabitants of Marocco—The Berbers.

As in the rest of Mauritania, the population of Marocco still remains fundamentally Berber, this element having, since the time of the Phœnicians, always maintained the preponderance. The successive conquering races, even the Arabs, who have remained masters on the plains and in the large towns, have succeeded only in driving the natives to the upland valleys, without acquiring a numerical superiority in the country. At present the proportion of Berbers is estimated at about two-thirds of the whole population, and especially in the highland districts, remote from the town and seaboard, they form the almost exclusive element.

At the same time this general expression, Berber, applied collectively to all the inhabitants not of distinctly Semitic or Negro descent, by no means implies a community of origin. On the contrary, many different races have probably contributed to the formation of the aborigines, and Iberian tribes are even supposed at one time to have occupied the slopes of the Atlas. As in other parts of Barbary, especially Tripolitana and East Algeria, megaliths have been found in various parts of Marocco, in every respect similar to the dolmens, menhirs, cromlechs, and suchlike remains in Britain and Brittany. The finest monolith hitherto discovered is that of Mzora, standing on the eastern edge of a plateau, whence a view is commanded of the Tetuan highlands. This menhir, which is over 20 feet high, is known as the Uted, or "tent-pole."

The Imazighen, or Berbers of Marocco, who comprise several tribes or confederations bearing the same name as those of Algeria (Shawïa, Beraber, Zenaga or Saheja, Guenzula, &c.), are divided into four perfectly distinct groups, occupying separate territories and characterised by different tribal customs. Those of the north, who hold the Rif highlands, the peninsula of Tangier, and most of the hilly district bounded southwards by the course of the Sebu, take the generic name of

Akbaïl or Kebaïl, that is "Kabyles," like the Jurjura highlanders. The frontier town of their domain on the maritime slope of the Atlas is Sefru, a short distance south of Fez. North of this place the term Akbaïl is applied to all natives of Berber race, while south of it all call themselves Shleuh, Shluh, or Shellaha. This latter appellation comprises under various forms all the settled Imazighen of white race who inhabit the upland Atlas valleys. But in South Marocco, on both slopes of the mountains, and in the Saharian oases, the peasantry, who resemble the

Fig. 184.—A Tangier Arab.

Algerian Ruaghas in the dark colour of their complexion, are also classed amongst the Imazighen, and are collectively known by the name of Haratin.

On the southern slope of the Atlas every village presents a mixture of Shellaha and Haratin, in which the proportion of the latter element increases gradually from north to south—that is, from the upper Moluya to the lower Draa. Owing to their lighter complexion, the Shellaha regard themselves as superior to the Haratin, and in marriage contracts account is usually taken of this difference, the price of a

fair being higher than that of a dark bride. Nevertheless the Hartaniat women are often distinguished by their beauty, most of them having lovely and expressive eyes, and in their youth bright features combined with an extremely graceful carriage.

In the oases a Hartani is seldom elected chief of the tribe, this honour being usually reserved for the white Imazighen. Like the Algerian Shawïa and Kabyles, many of the Marocco Imazighen are distinguished by light hair and blue

Fig. 165.—Arab Woman of Tangier.

eyes. But in the central and southern regions this fair type appears to be extremely rare, except in some of the southern hilly districts. It seems to be most frequently met in the Rif, that is, the northern coastlands that have been most frequently occupied by invaders or immigrants from the Iberian peninsula. Hence M. Faidherbe is inclined to regard them as the more or less mixed descendants of the race which raised the great monolithic monuments in North Africa.

The Tamazight (Shluh or Shellaha) language is spoken by the great majority

of the Marocco Berbers. It is even much better preserved in the extreme west than in other parts of Mauritania, and old manuscripts of the Koran transcribed in Berber characters are said still to exist in the Rif highlands. In nearly all the northern tribes the women and even the children understand and even speak Arabic. But in the hills and oases of the Saharian slope certain communities living in secluded districts remote from the great trade routes speak Tamazight alone, employing interpreters, chiefly Jews, in their intercourse with the Arabs. On the other hand, the Beni-Hassen of the Tetuan uplands, and some other tribes of undoubted Berber origin, have completely forgotten their mother-tongue, and now speak Arabic exclusively.

Amongst all these Imazighen, scattered over a vast territory, varying in complexion from fair to dark, and speaking different languages, a great diversity of types, habits, and customs also naturally prevails. In some tribes the women have preserved the practice of tattooing; in others they cover the face with a black veil at the sight of strangers, or else turn their back on the wayfarer; but, as a rule, they walk abroad unveiled and with a bold carriage. The practice of stuffing young girls with paste-balls, to give them the corpulence so much admired in Marocco, is common to most of the urban communities, and even to many nomad peoples.

The dress varies with every tribe, and at a distance the clan to which strangers belong is easily recognised by their costume and arms. Usually men and women wear only a single haïk woven of wool or cotton, and attached to the shoulders with clasps or knots. Nearly all the natives have bow legs: a feature due to the way children are carried pickaback by their mothers, wrapped in a fold of the haïk.

Except the nomads that roam the plains at the foot of the Anti-Atlas and Bani ranges, and the semi-nomads in the north and south, whose movable straw dwellings resemble beehives, nearly all the Imazighen live in stone houses variously grouped in the different villages. On the southern slope of the Atlas they are disposed in the form of ksurs, or strongholds, like the fortified villages of the border ranges in South Orania. Elsewhere each family dwells apart, the houses of the community being scattered irregularly over the hillside, like those of the Pyrenean Basques.

With the exception of a few tribes near the large towns, the bulk of the Berber population may be said to have remained practically independent, although every phase of transition occurs, from complete submission to absolute autonomy. Some of the Imazighen pay the imposts voluntarily, but most of them do so only under pressure, often even escaping to their allies, and leaving nothing but empty houses in the hands of the taxgatherers. The oppression of the Sultan's government is found on the whole more intolerable than tribal warfare and the savage freedom enjoyed by the independent communities. Nevertheless, some of the more powerful tribes consent to receive a kaid, that is, a sort of envoy from the Sultan, who is respected if upright, but usually merely tolerated as a stranger. The dependence of some clans is of a purely spiritual character, while the autonomous tribes often

play the part of allies, entering into treaties with the Emperor on the footing of political equality. Lastly some of the groups, such as the Riata, who hold the hills on the route between Fez and Tlemcen, maintain no relations of any sort with the Government. "They have neither god nor sultan," as it is said, "but only powder." They accept no command from sheikh or chief, but act "every man for himself with his gun."

Like the Jurjura Kabyles, the Marocco Berbers regulate all their affairs in the *anfalis*, that is, the jemaâ, or public assembly. The tribes are merely so many large families, which break readily into fragments, and unite again in fresh groups according to their temporary interests or caprice. Even traditional codes of law are rare amongst the communes, which, as a rule, yield obedience to nothing except the decisions of the assembly when unanimously accepted by the heads of families.

Such is the prevailing system of government amongst the tribes occupying the maritime slope of the Atlas. On the opposite side the populations are more compactly grouped, in order the better to resist the attacks of the Saharian nomads. Here the villages are formally confederated into nations, which by means of delegates act in concert for the common defence. Other tribes, less careless of their autonomy, accept the position of vassals, recognising the supremacy of a chief, or of some more powerful tribe. Some elect a temporary chief, usually for a year, and as a rule the authority of the sheikhs is always precarious. If wealthy and of good birth, they hold their ground, but even then seldom succeed in neutralising the influence of the assembly, which meets and issues a sovereign decree on all weighty occasions.

The Jews generally serve to maintain commercial relations between the tribes in this universal state of disorganisation. But despised and hated as they are, they might run the risk of being killed at the entrance of every village, were they not protected by the collective will of the commune, or by the pledged word of some influential person. Yet there are tribes which will never admit a Jew, and he has consequently to pass through their territory in disguise, at the imminent peril of his life. The *mesrag*, or passport, corresponding to the *anaya* in Kabylia, can always be had for a consideration; but the payment once made, the protector becomes responsible for the life and welfare of his guest. In some cases the mesrag of a rich merchant or of a whole tribe may be purchased for a lifetime; it then takes the name of *debiha*, or "sacrifice," because it was formerly the custom of the suppliant to immolate a sheep on the threshold of the man whose patronage he sought.

By means of these agencies trade might be freely carried on from one end of Marocco to the other, but for certain marauding tribes which recognise no safe-conduct. The hills in the very neighbourhood of Fez are occupied by the Guerwan Berbers, who grant no mesrag, but allow travellers to pass through their territory on payment of a heavy sum exacted by armed force. The Din-Bellals of the southern slope of the Atlas undertake to escort caravans; but if their offer is declined they lie in ambush to plunder the passing convoys. If the travellers are

poor or members of a weak tribe, they are merely stripped and sent on their way naked but uninjured; if, on the contrary, they belong to any powerful tribe whose vengeance might be feared, they are killed right out to prevent the news of the attack from spreading, the duty of vendetta being sacred amongst the Marocco Berbers.

The Imazighen are no better instructed in the dogmas and practices of the faith they profess than are their Algerian kindred. The coast Arabs have even

Fig. 166.—Arab Camel-Driver.

preserved some of the observances of the hated Rumi. The women bear the sign of the cross tattooed on their person, and in difficult labour invoke the aid of the Virgin Mary. A few Latin words survive in the language, and the Roman calendar is still in use concurrently with the Arab. The marabuts who recite verses from the Koran are mostly of Arab descent; but their influence varies with the tribes, being jealously watched in some places, in others venerated as saints and implicitly obeyed. Some of their convents are regarded as sanctuaries, in

which culprits find a safe refuge. Many tribes refuse to recognise the obligation of making the pilgrimage to Mecca, although there are others, more zealous, who send yearly a number of devotees to visit the tomb of the Prophet. With the religious pilgrims are also associated a constantly increasing number of emigrants, who seek employment as labourers or harvesters in Algeria and Tunis.

## The Arabs.

The Arabs of the rural districts and the Moors of the towns, in whom the Berber, Arab, and European elements are diversely intermingled, are descended either from the conquering tribes from Arabia or from the Moors expelled from Spain. Those living in the midst of the Shluhs and of the Haratins in the southern districts, take the general name of Arabs, as if they represented the race in a pre-eminent sense. Amongst these marauding tribes of the southern oases are found the finest women in Marocco, remarkable alike for their perfectly regular features and fair complexion. Altogether, those who may be classed as Arabs number over a million. In the towns they are in a decided majority, and all now lead settled lives, except the nomads of the southern districts on the verge of the desert. Hence the contrast existing in Algeria between the Berber peasant and the Arab nomad prevails in Marocco to a very slight extent.

The Arabs of Marocco are noted for their sociable disposition. In almost every village, and even in the camping-grounds, they assemble in the building or the tent used as a mosque, bringing each his contribution and feasting in common. The large number of "saints" is also a remarkable feature of the Marocco Semites. Whole tribes consist of Shorfa, or descendants of the Prophet, and in Marocco have originated nearly all the religious orders of Mauritania, notably the Aïssawa and Derkawa confraternities. Next to Arabia, Marocco is regarded by true Mohammedans as the most illustrious of all lands. The reminiscences of its former power and culture impart to its inhabitants a special degree of prestige in the eyes of all the inhabitants of the oases between Mauritania and Egypt. While the eastern Mussulmans pray for the Caliph of Stambul, those of the west invoke the benedictions of Allah on the head of the Sultan of Marocco.

## The Jews and Negroes.

Next to the Berbers and Arabs, the most numerous ethnical group are the Jews, descended for the most part from those expelled from Spain. They call themselves Guerush Castilla, or "Exiles from Castille," and at solemn official weddings the Rabbins still use formulas concluding with the words: "All according to the usage of Castille." Those settled in the seaports north of the Wed Tensift still usually speak Spanish, while those of Fes and Meknes have adopted Arabic. According to most authorities, the Marocco Jews number over one hundred thousand, although Rohlfs is of opinion that this figure is more

than three times too high. The handsomest women in Marocco are said to be the Jewesses of Meknes, and the term Meknasia is now applied to all women remarkable for their personal charms.

The Negro element is also represented in every part of western Mauritania, where, according to Rohlfs, there are as many as fifty thousand Sudanese blacks of pure stock between Tarudant and Tangier. Many half-castes are also found in the families of the upper classes in the large towns, and the reigning family itself is partly of Negro blood. But in the rural districts interminglings of this sort are less frequent, and never occur amongst the Berbers on the northern slope of the Atlas.

The Haussas, Bambaras, Fulahs, and other Negro populations in Marocco are constantly recruited by the organised slave trade carried on through the caravan traffic with Sudan. Here they are usually purchased with blocks of salt, whence the term *gemt-el-melha*, that is, "bought for salt," often applied contemptuously to slaves and freedmen. In the Marocco bazaars the slaves are generally sold by auction, like any other "live stock," the vendor guaranteeing them free of "vicious habits," and the buyer causing them to be examined by the "veterinary surgeon." The price varies from sixteen or eighteen shillings to twenty pounds, according to age, sex, strength, or health.

The European element is represented by a few thousand strangers settled in the seaports, and a few hundred French and Spanish renegades in Fez, Meknes, Marrakesh, and other inland towns.

## Topography.

A portion of north-east Marocco is comprised in the hydrographic system of Algeria, the town and district of *Ujda* being situated in the basin of the Tafna river. Ujda, which lies at the foot of the Khudriat-el-Khadra hill, in the plain of Angad, is a mere aggregate of small houses surrounded by olive groves, doing some trade across the border. Thanks to its proximity to the Algerian frontier, it ranks as an imperial garrison town, depending directly on the Sultan's Government. About six miles to the west, on the banks of the Islay, a headstream of the Tafna, was fought the famous battle of Islay, August 14, 1844, which placed the Marocco Government at the mercy of France, and which was followed by the treaty of Tangier, leaving to the Sultan nearly the whole of the debated territory east of the Moluya.

The eastern affluents of the Moluya are partly occupied by the warlike and independent Beni-Mgill Berber tribe, whose chief village is *Bulayul*, which lies over 3,000 feet above the sea on one of the torrents forming the Upper Moluya. Lower down in the same valley is the less powerful Berber confederation of the Aitu-Fella, who in return for their recognition of the Sultan's authority are privileged to levy a sort of black-mail on travellers passing through their territory. Their ksar, or chief village, is *Ksabi-esh-Shorfa*, inhabited, as its name indicates,

by descendants of the Prophet, and situated on a plain where converge the upper branches of the Moluya. Ksabi (Eksebi) marks the linguistic parting-line between Arabic and Berber, the latter being spoken exclusively on one side, in the direction of the Atlas, the former prevailing on the other, in the direction of the plains.

### Debdu—Kasbah-el-Aiun.

The small town of *Debdu* lies, not on the Moluya, but on an eastern affluent on the route leading to the upland plateaux. Immediately above the town rises a

Fig. 167.—Ujda, Ielt, and the Angad Plain.

Scale 1 : 480,000.

vertical bluff crowned with a minaret and a dismantled fortress. Beyond it the ground still rises through a series of escarped terraces to the plateau of Gada, which is clothed with one of the finest forests in Morocco. Debdu, which consists of about four hundred earthen houses, is the only place in the empire where the Jews are in a majority. All are engaged in trade, their commercial relation extending eastwards to Tlemcen in Algeria, westwards to Fez through the Taza route, and down the Lower Moluya valley to the Spanish coast-town of Melilla. In the neighbouring hills is bred a race of mules famous throughout Western Mauritania.

West of Debdu the Moluya flows through a series of mountain gorges down to

the extensive plain of Tafrata, which, when clothed with verdure in spring, is visited by the Huara Arabs. Here the Moluya receives its chief affluent, the Wed Za, which is a perennial stream fed by the Wed Sharf and other torrents from the upland plateaux south of the Tell. The riverain population have their chief market, not in the valley, but farther east on the Angad plain, on an eminence crowned with the kubba of *Sidi-Melluk*. Around this famous shrine are grouped the houses of Arab and Jewish merchants trading with Ujda and Tlemcen. The village is usually known by the name of *Kasbah-el-Aïun*, or "Castle of the Springs," from the numerous wells that have been sunk at the foot of the hill.

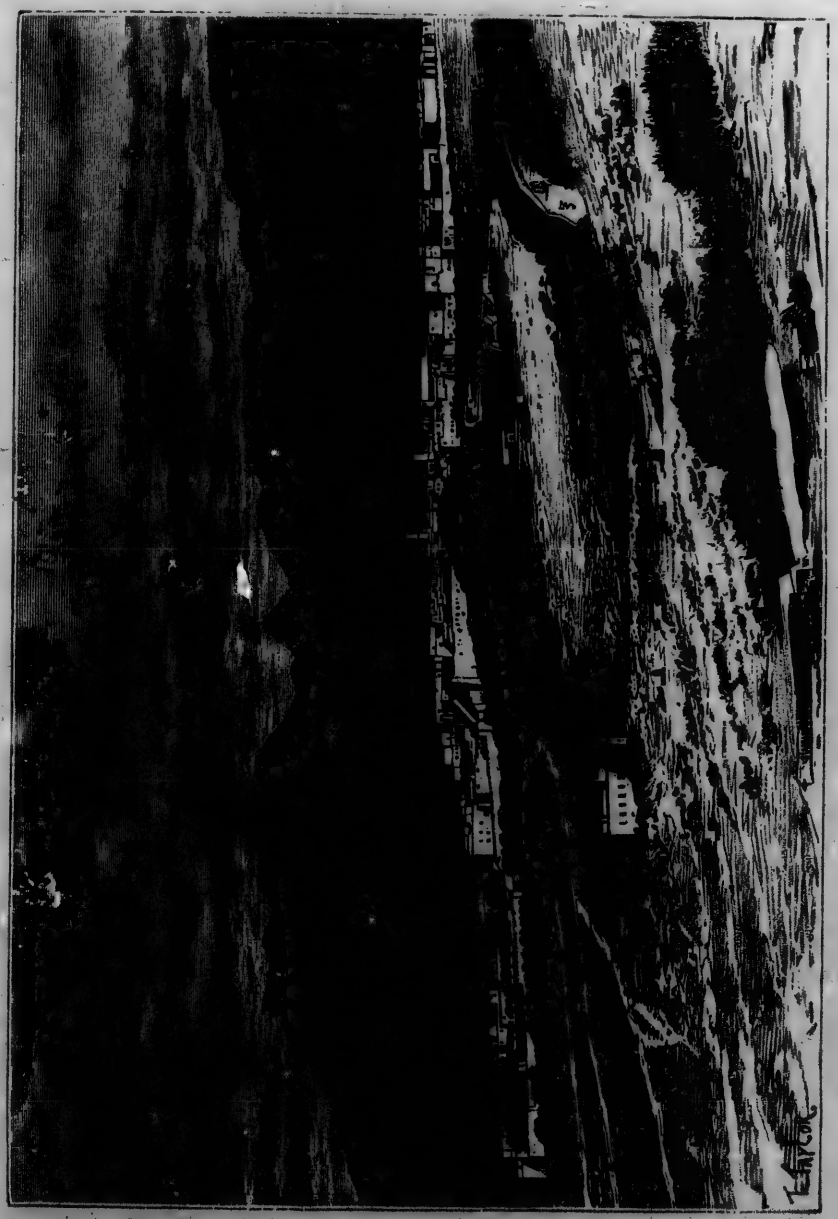
The semi-independent Berber tribes of the district are kept in awe by a detachment of about a hundred and fifty regular troops stationed at this frontier outpost. Of these tribes the most powerful is that of the Beni-Iznaten (the Beni-Snassen of the neighbouring French Algerians), who comprise several clans originally from the district of Nemours. These irreconcilable foes of the Christians occupy the isolated mass of hills between the Angad desert and the lower course of the Moluya.

### Jaferin Islands—Melilla.

No important town has been founded on the low-lying plain through which the Moluya flows seawards, and here the nearest military position is that of the Jaferin (Zaffarine, Zafrin, Shaffarinas) Islands, the Tres Insulæ of the ancient geographers. The only importance attaching to these barren rocks is due to the shelter they afford the shipping at anchor in the roadstead, and to their strategic position over against the Moluya Valley, and not far from the Algerian frontier. During the first years of the conquest the French had intended to occupy the archipelago; but when they had finally decided on taking this step in 1849, they were anticipated by a few hours by the Spaniards. The group is now strongly fortified, forming a military outpost of the stronghold of *Melilla*, some 30 miles farther west.

Melilla, the *Mlila* of the natives, occupies the site of the Phœnician city of *Rusadir*, whose name is perpetuated by the neighbouring headland of Ras-ed-Deir (Raseddir), the Cape Tres Forcas of the Spaniards. The town stands on a terrace at the foot of a steep cliff crowned by the Spanish fortress of *Rosario*, which has been raised on the foundations of other citadels that have here succeeded each other for a period of three thousand years. Some shelter is afforded to the shipping by an inlet penetrating to the south-west of the fortress, possibly the work of the Phœnicians, who constructed similar havens at Carthage and Utica. Melilla, whose fortifications were half destroyed by an earthquake in 1848, has been in the possession of the Spaniards since the year 1496, and is now connected by a regular line of steamers with the mother country. Some 30 miles off the coast stands the barren islet of *Alboran*, which is also a Spanish stronghold.

On the semi-circular Rif coast, between Ras-ed-Deir and Tetuan, stand two other military stations, *Alhucemas* and *Peñon de Velez*, which have been held by Spain for over three hundred years. Both are little more than penal settlements, occupied

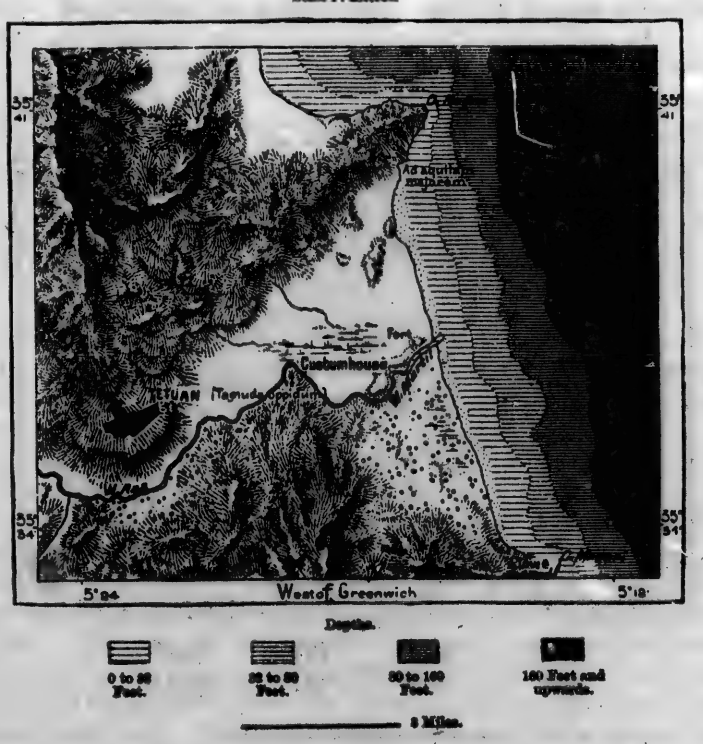


GENERAL VIEW OF TETUAN.

by convicts from Spain and by small garrisons. Facing Peñon de Velez (Velez de la Gomera) are the remains of the Roman city of *Badis*, which in mediæval times was regarded as the port of Fez on the Mediterranean. This spot would be the most convenient landing-place for travellers proceeding from the Rif coast to the Sebu Valley; but no carriage roads have been opened across the intervening hills, which

Fig. 168.—Tetuan.

Scale 1 : 200,000.




are still held by independent Berber tribes. In one of the upland valleys stands the town of *Sheshawen*, surrounded by vineyards, and in the neighbourhood is the mother-house of the religious order of the Derkawas.

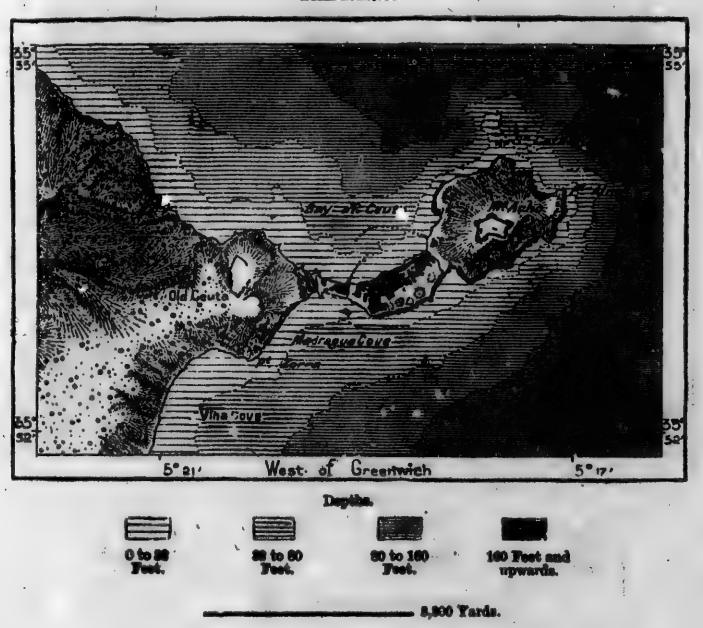
## Tetuan—Ceuta.

On the Mediterranean seaboard the chief city of the empire is *Tetuan*, the *Titawan* of the Moors, and the *Tettawen* of the Berbers, that is, the "Place of Springs." The name is fully justified by the numerous and copious streamlets

flowing from the surrounding amphitheatre of hills, and watering the neighbouring gardens and orange groves. The town, which stands on a terrace some 200 feet high, is commanded by a citadel, and encircled by a lofty rampart flanked with towers, within which a second enclosure contains the Mellah, or Jewish quarter. The bar, which is accessible only to light craft, is also defended by a fortified custom-house. Nearly all the wealth of the place is in the hands of the Jews, who constitute about a fourth of the whole population, and who here enjoy a certain degree of autonomy. Hence Tetuan is regarded as one of the centres of the Israelites, who own all the bazaars, and carry on an extensive trade with the

Fig. 169.—Ceuta.

Scale 1:90,000.




surrounding regions, through Ceuta, Tangier, and Gibraltar. The exports are chiefly oranges and *mahaya*, a kind of brandy distilled from grapes. The local industries, largely in the hands of immigrants from Algeria, comprise earthenware and the other wares required to meet the usual wants of Mussulman populations. Peopled to a large extent by Mudejares—that is, by Moors expelled from Granada and Castille—it has often had to resist the attacks of the Spaniards, by whom it was plundered in the fifteenth century. A hundred years later, its corsairs held the surrounding waters, carrying off thousands of captives from Andalusia, while trading peacefully with the English, Dutch, and Venetians. In 1564 the port was

destroyed by Philip II., and after a decisive victory in the neighbourhood, Tetuan was again seized by the Spaniards in 1859, but after long negotiations finally restored to the Sultan.

The neighbouring town of Ceuta, however, has been held by Spain for the last three hundred years, although on one occasion, towards the end of the seventeenth and beginning of the following century, besieged or blockaded by the natives for a space of no less than six-and-twenty years. Although a "free port," Ceuta is no longer a great centre of trade, as in Mussulman times; the Christian stronghold, defended by a triple line of ramparts, and bristling with guns and *chevaux de frise*, is carefully avoided by traders from the interior. Hence, from the commercial aspect, the greatest contrast exists between this "African Gibraltar," and that on the Spanish mainland, both of which otherwise resemble each other in their geological structure, their peninsular form, and their strategical position on either side of the intervening strait. A fort commands the town, but is itself commanded by the heights of the interior, some of which are occupied by Spanish defensive works. Hence, apart from the opposition of English diplomacy, it will never be possible, except at a vast expenditure, to transform Ceuta into a really formidable rival of Gibraltar.

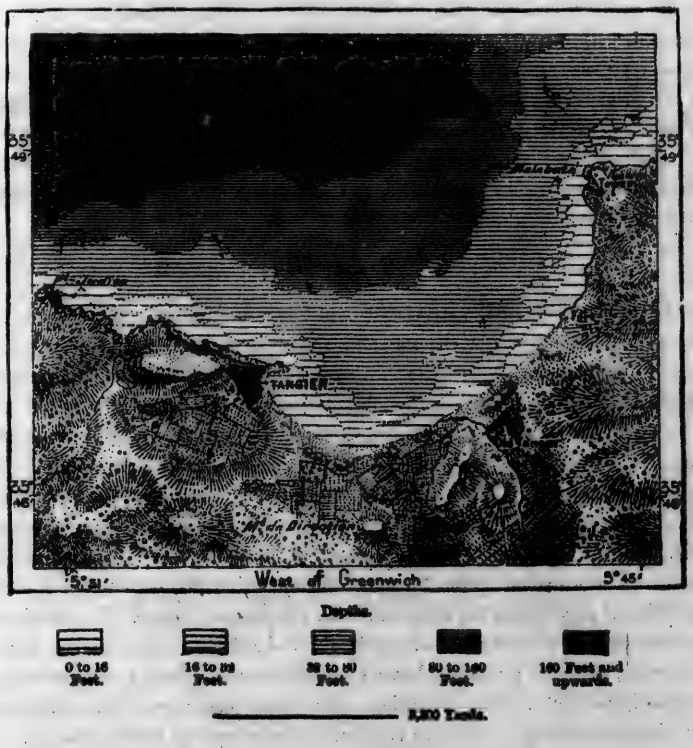
## Tangier.

On the African side of the strait, between Ceuta and *Tangier*, there are no towns, *Kasr-es-Serir* being now a mere mass of shapeless ruins. All the trade of the surrounding districts has been diverted to the half-European city of Tangier, which is already within the influence of the Atlantic tides, here rising to a height of over eight feet. Tangier, the Tanja of the natives, is the ancient *Tinge*, that is, the "Lagoon," which is fabled to have sprung from the ground with Antæus. Founded, according to tradition, before the dawn of history, Tinge became, under the Romans, capital of Mauritania Tingitana, answering to the present northern division of Marocco. But at that time it does not appear to have covered a larger surface than at present. The so-called "Old Tangier," whose ruins are seen to the south-east, was a mediæval Arab town unconnected with the Roman Tinge. Its position, on a semicircular bay at the entrance of the strait, and offering some shelter from the western gales, must at all times have secured for this place a certain degree of commercial importance. The Venetians were here long received as guests, while the Portuguese, wishing to enter as conquerors, were several times repulsed. They at last seized it in 1471, and for two hundred years it remained in European hands, the Spaniards succeeding to the Portuguese, and the English to the Spaniards. Under the British rule no expense was spared in strengthening the fortifications and improving the harbour works. But the incessant attacks of the Moors, the lack of supplies, the difficulty of provisioning the place, at last exhausted the patience of the English, who, in 1684, evacuated Tangier, blowing up the piers in order to destroy the port. Twenty years afterwards they seized Gibraltar, which not only enjoyed the same military advantages, but also presented an insular position more easily defensible.

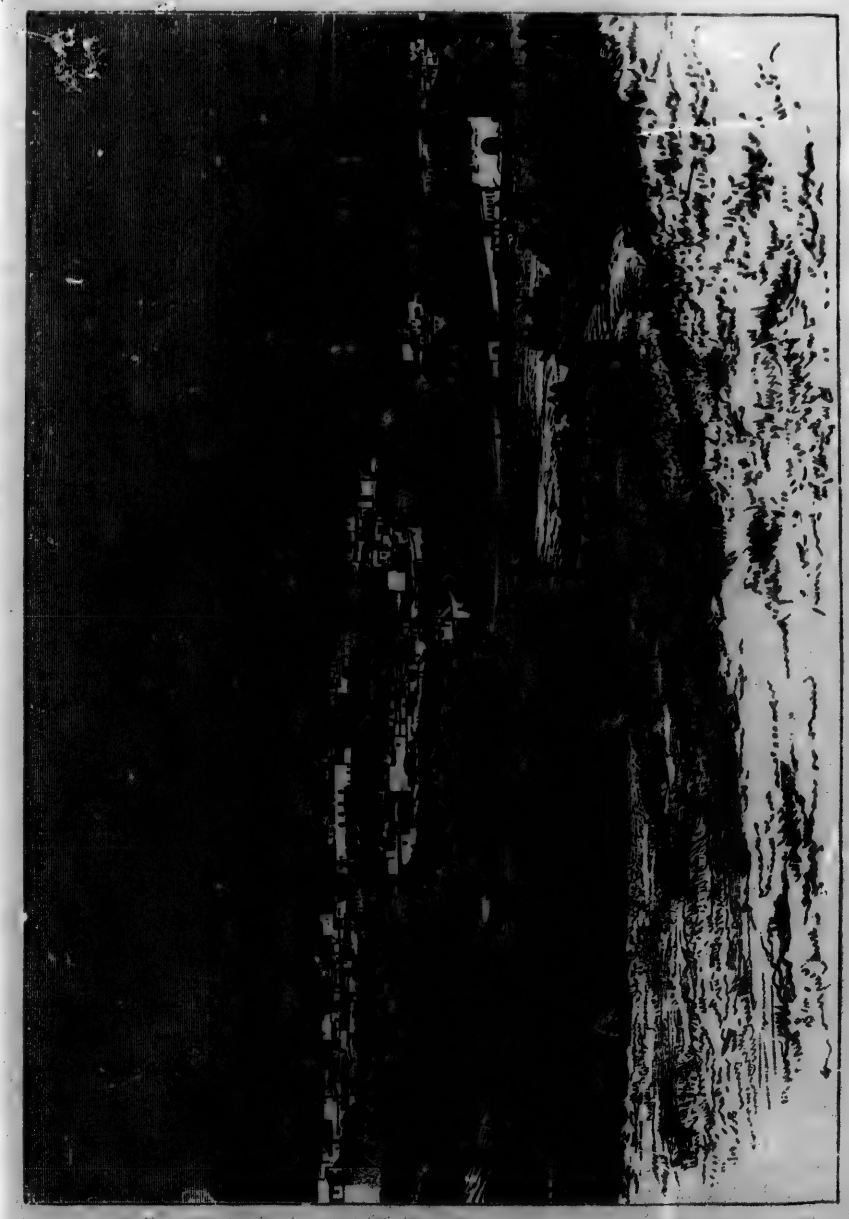
Thus abandoned as a military station, Tangier soon began to attract traders from every quarter, and has now become a chief centre of the exchanges with the European seaports. The foreign envoys to the Sultan's court generally reside here, as does also the Minister of Foreign Affairs, in order the more easily to maintain relations with the European powers. Tangier has thus become a sort of capital, as it is fast becoming a European town, with its new houses, landing-stage, workshops, journals, batteries, neighbouring lighthouse, and suburban villas.

Fig. 170.—Tangier.

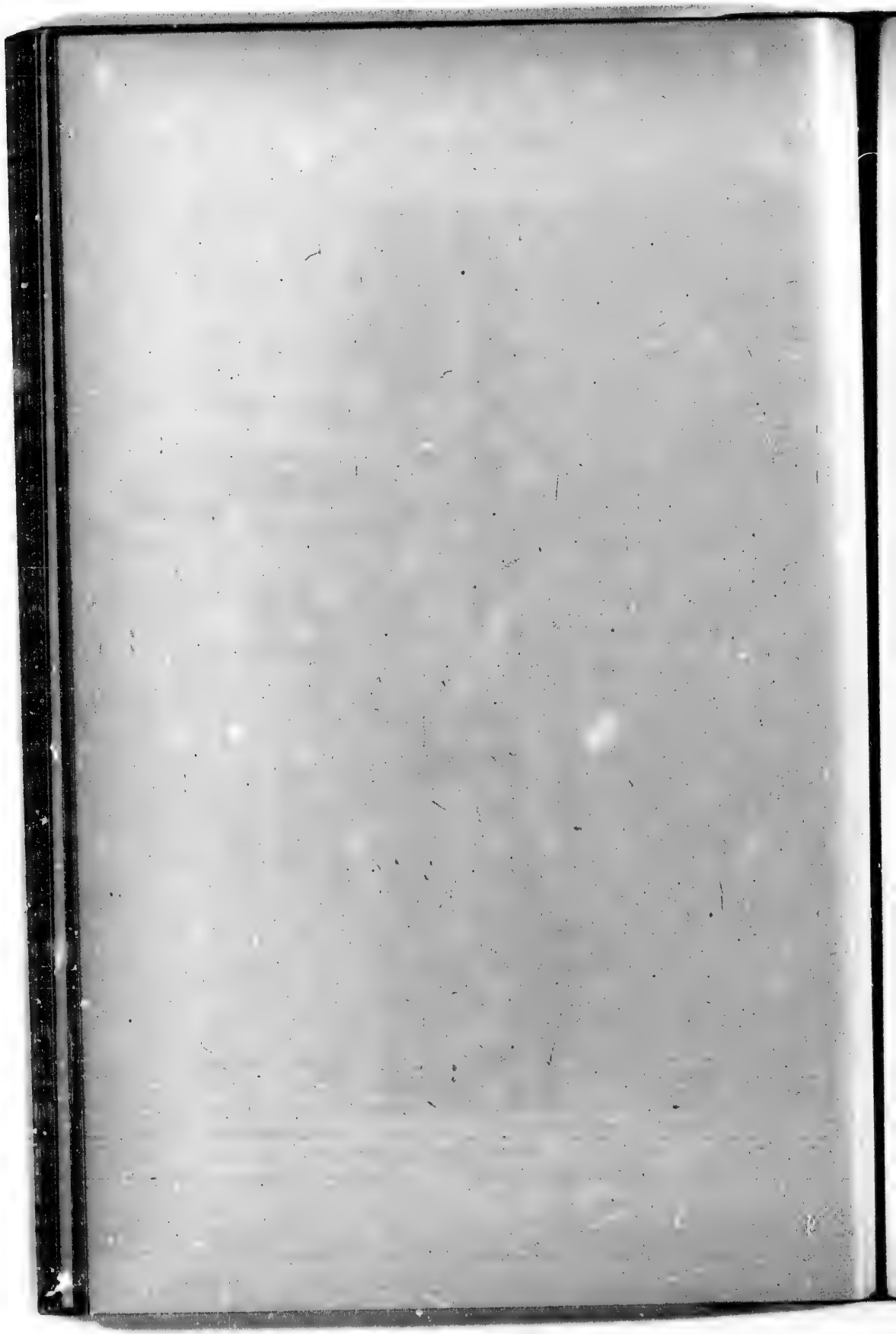
Scale 1 : 100,000.




In its outward aspect Tangier bears some resemblance to Algiers, being like it disposed in amphitheatrical form on the slope of a hill, which is crowned by the embattled walls of a citadel. A considerable traffic is maintained in the thoroughfares leading from the port to the gate of the upper town. Although the harbour is too shallow to admit large vessels, which are obliged to anchor in the offing, a large trade is carried on, especially with Gibraltar, which is chiefly provisioned from this place. Wool, raw and dressed hides, and other produce are also shipped in exchange for hardware, cotton goods, tea, sugar, chandlery, and other foreign



TANGIER—VIEW TAKEN FROM THE EAST.



merchandise. Invalids also resort in considerable numbers to Tangier, which, as a health-resort, has few rivals, even on the Mediterranean seaboard.

## Larash—Taza.

On the Atlantic coast, some 24 miles south of Cape Spartel, formerly stood the Roman city of *Zilis*, which afterwards became the *Asila* (*Ar-Zeila*, *Ar-Zila*) of the Arabs, now a mere collection of hovels, interspersed with some Portuguese structures. About 15 miles farther south stands *El-Araish*, or *Larash*, the first trading-place on this coast. Larash, present capital of the province of Gharb, dates at least from the ninth century, although it long remained an obscure village, rising to commercial prosperity only under the Portuguese and Spanish administration. Its re-conquest by Sultan Mulai Ismaïl in 1769 is one of the great events in the annals of Morocco. The garrison, 3,200 strong, was partly exterminated, partly reduced to slavery for a period of two years, and one hundred and eighty guns fell into the hands of the Mussulmans. Since that time Larash has successfully resisted the several naval demonstrations of the French in 1785, the Austrians in 1829, and the Spaniards in 1860.

The entrance to the port of Larash, which lies on the south side of the estuary of the Wed-el-Khus (Lukkos), is obstructed by a bar inaccessible to vessels of over a hundred and fifty or two hundred tons. Nevertheless it is much frequented by Portuguese fishing-smacks, and by ships, especially from Marseilles, which here take in cargoes of wool, beans, and other local produce, chiefly in exchange for sugar.

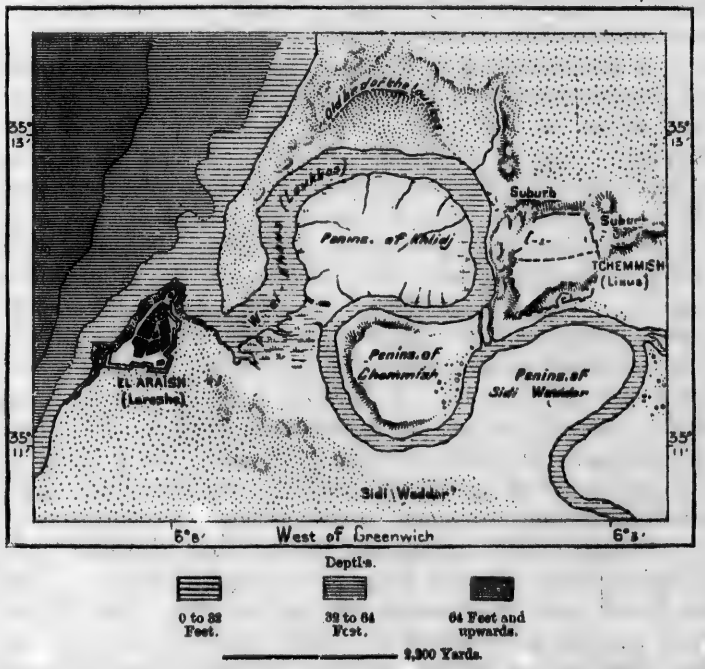
The Libyan, Phœnician, and Roman city, to which Larash has succeeded, has not entirely disappeared. On a headland overgrown with brushwood, and commanding two bends of the river about 2½ miles east of the present town, are visible the remains of Phœnician walls constructed of huge blocks like those of Arad, and extended by Roman ramparts of smaller dimensions. These are the Lix, or Lixus lines, now known to the Arabs by the name of *Chemmish*. In the alluvial deposits of an inlet at the foot of the hill may still be detected the traces of a port large enough to accommodate a few vessels. But none of the marshy peninsulas enclosed by the Lukkos can possibly have been the "garden of the Hesperides" mentioned by the ancient writers. Tissot seeks for their site in an islet now connected with the mainland through a winding in the bed of the river. During the last two thousand years the whole form of the estuary seems to have been completely modified. Some menhirs and other megaliths visible farther east on the route from Tangier to Kasr-el-Kebir date probably from a still more remote epoch.

The famous town of *Kasr-el-Kebir*, or the "Great Castle," stands like its outport, Larash, on the banks of the Lukkos, in a marshy district often under water. The town is surrounded by vineyards, olive and orange groves, and the neighbouring hills afford pasturage for numerous herds of cattle and flocks of sheep. Kasr-el-Kebir, which notwithstanding its name is not enclosed by ramparts, is built of brick, and stands for the most part on ancient foundations. Here Tissot has found the only Greek inscriptions hitherto discovered in Morocco. The battle known in history as that of Alkasar-Kebir, which in 1578 put an end to the Portuguese

power in Marocco, appears to have been fought, not at the place bearing its name, but 6 miles to the south-east of Larash, on the banks of the Wed-el-Makhzen, a tributary of the Lukkos.

South of Larash the monotonous seaboard follows an unbroken line for 90 miles to the mouth of the Sebu. In the upper part of this river basin lies the central market town of *Taza*, at an altitude of 2,750 feet, and near the depression between the Rif highlands and the Atlas system. Thus commanding the line of communication between the Sebu and Moluya basins—that is, between West Marocco and Algeria—Taza occupies the most important strategical position in the empire. It belongs officially to the Sultan, although the garrison troops here maintained by

Fig. 171.—El-Araish and Chemmish.
Scale 1 : 75,000.

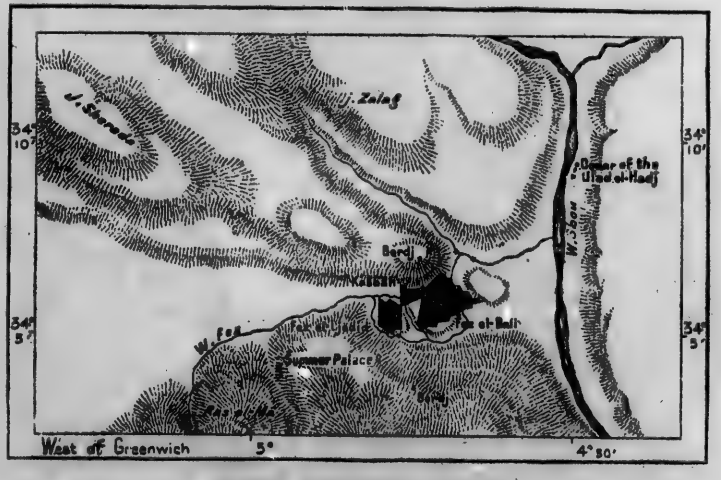



the Government are practically at the mercy of the powerful Riata tribe, who hold the hills north and south of the town, and who are the true masters of the whole district. When Foucauld visited the place in 1883, the whole population, worn out by the oppressive exactions of this tribe, and hopeless of any further help from the Sultan, "were sighing for the happy day when the French would come to their rescue." Nevertheless, a little trade is done with Fes, the coast towns, and the Moluya district, through the intervention of the detested Riatas, who cultivate the hemp and tobacco which supply narcotics to Taza and the other towns of North Marocco.

## Fez.

*Fez*, the capital most frequently visited by the Sultan, and the largest city in the empire, occupies an advantageous geographical position about the centre of the depression separating the Rif from the Atlas highlands. It also lies on the natural route which skirts the western foot of the Atlas range, so that its basin is intersected by the two great historic highways of Western Mauritania. The district enjoys the further advantages of a fertile and well-watered soil and pleasant scenery, diversified with rich open plains and densely wooded heights. The city, encircled by an amphitheatre of hills, occupies a terrace of conglomerate about 650 feet high, divided into secondary sections by numerous ravines. The Wed-el-Fez, rising in a rocky cirque a little to the south-west, and fed by innumerable springs, six miles

Fig. 172.—Fez and Neighbourhood.
Scale 1 : 300,000.




below the town effects a junction with the Sebu, which is here spanned by one of the few stone bridges found in Morocco. Seen from the bluffs crowned with ruins which encircle it on the south, north, and west, Fez presents a charming prospect, "emerging like a white island above the dark green sea of its vast gardens." Above the irregular surface of the terraces rise the gilded summits of its minarets, the lofty walls of the citadel, and the glittering roof of the great mosque.

Fez is divided into two distinct towns, each with its single or double enclosure flanked by towers and buttresses. To the west lies Fez-el-Bali, or "Old Fez," still comprising the greater part of the urban population; to the east Fez-el-Jedid, or "New Fez," standing on the highest terrace, and towards the north connected with the old town by the redoubts of the kasbah. Immediately east of the palace in Fez-el-Jedid the river ramifies into two branches, one flowing through the imperial

garde.., the other falling through a series of cascades down to the lower town, where it again ramifies into a thousand rivulets. Unfortunately most of these channels are little better than open sewers, which, uniting below the town, flow in a fetid stream to the Sebu. Hence these damp quarters are constantly a prey to

Fig. 173.—A Gateway in Fez.

epidemics, the pallid complexion of the inhabitants sufficiently attesting the foul atmosphere in which they live. The Mellah, or Jewish quarter, situated near the citadel in the new town, is outwardly little better than the Moorish districts; but

the houses are cleaner inside. The Jews here, as elsewhere, monopolise most of the trade, but are obliged to conceal their wealth in order to escape from the exactions of their rulers.

Fez, or the "Hatchet," has been so named, says Ibu-Batuta, from a stone hatchet discovered in a fissure of the soil, when the city was founded in the year 793. This was probably a stone weapon dating from pre-historic times, when the people were troglodytes, as they partly still are. In the midst of the surrounding gardens numerous caves are found, in which the natives take refuge like wild beasts in their dens. According to local tradition and the statements of mediæval writers, Fez had at one time a population of four hundred thousand souls, dwelling in ninety thousand houses. Of its 785 mosques not more than 130 now remain, and some of these are abandoned. Two are regarded as specially sacred, almost as holy as the sanctuaries of Mecca and Medina. These are the mosques of Mulai Dris and Karawin, the latter possessing a famous library and a zawya frequented by numerous students from Marocco and Algeria, who here study theology, jurisprudence, and astronomy, in accordance with the principles handed down from the time of the Almovarides, or "marabuts." Since that epoch Fez has been in a state of decadence, notwithstanding the numerous immigrants expelled from Spain. These "Andalusian Moors" were formerly powerful enough to constitute an independent faction which commanded half the city.

As a trading place Fez has always held a foremost position, its commercial relations being chiefly with Tangier, Marrakesh, Rbat, and Tlemcen. The local industries, grouped in several guilds, jealous preservers of their traditions and privileges, display a certain originality in weaving and embroidery, in leather-dressing, and the manufacture of earthenware, of enamelled vases, and damascened arms. Its sumptuous garments—yellow for the Mussulmans, black for the Jews, red for the women—find a ready sale throughout the empire. To its other industries has recently been added that of brandy, distilled from dates, figs, and other fruits. The surrounding district, which contains rich deposits of salt, besides iron ores and sulphur springs, is doubly holy, thanks to the efficacy of its healing waters and the shrines of "saints" crowning the neighbouring heights.

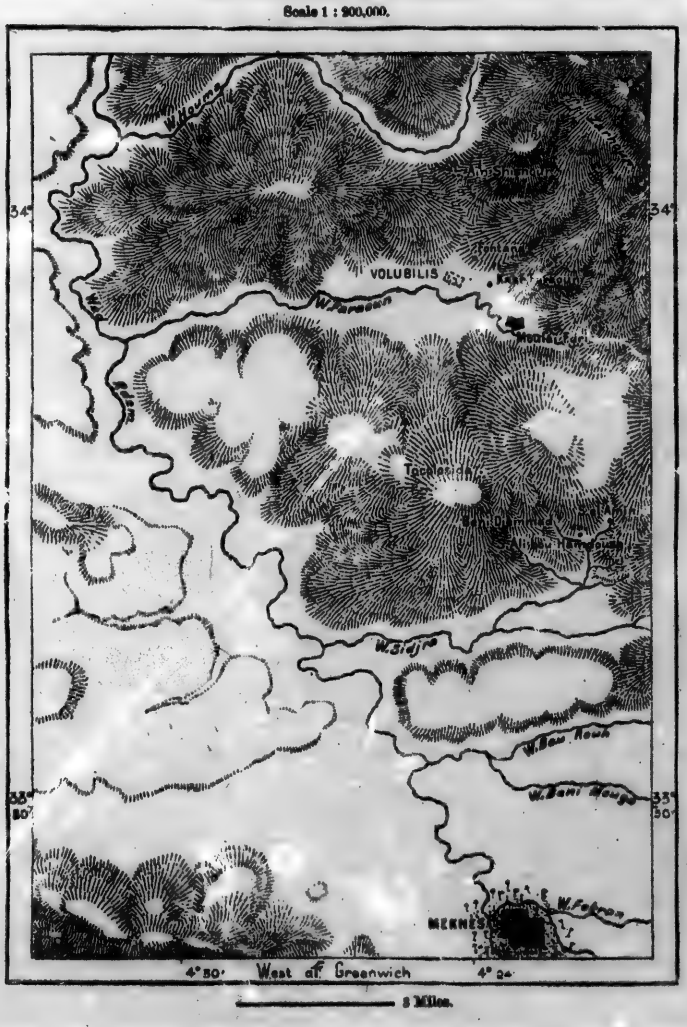
South of Fez the affluents of the Upper Sebu water the gardens of several small towns and hamlets, amongst which is the delightful town of *Sefru*, on the frontier of the territory of the Aït-Yussi Berber tribe. While Fez betrays every sign of decadence, Sefru, lying in one of the richest districts of Mauritania, presents the aspect of the greatest prosperity. Its wooded hills yield excellent timber, and its fertile plains supply vast quantities of olives, lemons, cherries, grapes for the local consumption and for export. Excellent wines are here produced at a very low price.

### Mequinez—Volubilis.

*Meknes* or *Miknasa*, the *Mequinez* of the Spaniards, has often been called the "Versailles of Marocco." Lying 33 miles west of Fez, it is still comprised within the Sebu basin, its district being watered by affluents of the Wed Rdem, which join the main stream in its lower course. It covers a considerable space enclosed

by well-preserved ramparts, and like other towns of the empire contains a fortified kasbah, and a mellah, or Jewish quarter, surrounded by separate walls. These fortifications were built by Christian captives, who when worn out by fatigue were despatched and built into the masonry. The broad streets of Mequinez are

Fig 174.—Mequinez and Volubilis.
Scale 1 : 200,000.




interspersed with gardens, "the finest in the world," which supply Fez with fruits and vegetables. The grand gateway of the imperial castle, with its marble pillars, horse-shoe arches, enamelled tiles, and ornamental inscriptions, is a noble specimen of Moorish architecture, although now much dilapidated. The mosque of Mulai

Ismail, the "Saint-Denis" of Marocco, is also in a half-ruined state. Within the park, over a mile in circumference, are comprised palaces and graceful kiosks, a stud of over a thousand high-bred mules, besides a labyrinth of underground galleries till recently used as granaries. The Emperor was compelled to throw open these stores during the terrible famine of 1878, when the greater part of the corn was found to be mouldy. According to popular rumour, the palace of Meknes also contains the imperial treasure, guarded in secret crypts by three hundred Negro slaves destined never to see the light of day.

The Meknes district is the agricultural centre of the empire, and on the state of its crops depends the whole annual trade of the country. Towards the north, between the Rdem and Sebu Valleys, rise the *Zarhun* hills, where is situated the town of like name, formerly one of the chief intellectual centres of Mauritania. The inhabitants of Zarhun, all of Arab stock, are extremely fanatical, and frequently entertain the emissaries of the Senûsiya brotherhood. Here is the original home of the Aïssawa, who yearly resort in large numbers to their zawya in Meknes, to which they are bound to make a solemn pilgrimage every seventh year.

The kubba of *Mulai-Edris*, north of Meknes, is the most venerated spot in the empire. Hitherto no European traveller has ventured to enter the holy place, which occupies a savage gorge in the Zarhun hills near the zawya. During great feasts men and women, seized with fits of frenzy, hack themselves with knives and hatchets, while others fall with their teeth on any passing animal, such as dogs, sheep, or goats. Even human beings are said on such occasions to have been devoured alive.

On a slight eminence over a mile north-west of Mulai-Edris stand the ruins of *Kasr Faraun*, first visited and described by Windus in 1721. The name of *Walili*, borne by the neighbouring village, and the inscriptions found on the spot, identify this place with the *Volubilis* of the Romans. Long used as a quarry by the builders of Meknes, Volubilis has preserved of its past greatness two monuments only, a triumphal arch and the gates of a basilica. The marbles of this city are even said to have found their way across the Atlas to the distant oasis of Tafilelt. *Tocolosida*, another Roman station, stood in the neighbourhood of Volubilis.

## Wezzan.

*Wezzan*, the holy city on the northern slope of the Sebu basin, about midway between this river and Ksar-el-Kebir, was founded towards the close of the ninth century by Mulai Tayeb, a direct descendant of the Prophet. It is still exclusively peopled by Shorfa, who are held in great veneration throughout the Mussulman world, but who in the city itself are the very humble servants of the great lord, the Sherif in a superlative sense, more holy than the Sultan himself. By origin a "saint," his vast wealth has made him almost a god, who, through the members of the Taibiya order, levies contributions in money and kind in almost every village in Marocco. In return he distributes these alms with a free hand, keeping open stores for all comers, and often entertaining hundreds and even thousands of

pilgrims, who come to kiss the hem of his garment. The Sultan is not fully recognised until he has received the homage of the saint of Wezzan, who is also a "refuge of sinners," and whose native place is a general sanctuary for culprits. The authorities themselves would not dare to seize a suppliant at the tomb of Mulai Tayeb, even were he pursued by the personal wrath of the Emperor. The mosque attached to this shrine contains, amongst other treasures, a collection of nearly a thousand Arabic manuscripts. Recent events have somewhat impaired the religious influence of the Sherif, who is reproached for keeping a bodyguard of

Fig. 175.—Mulai Tayeb, Sherif of Wezzan.

Spanish renegades, his friendship for Europeans, his marriage with a Christian lady, his palace in the Italian style, and his costume modelled on that of the detested Rumi. In 1876 his application for the favour of being made a French citizen was refused.

Although the Sebu is the most populous and richest basin in the empire, the mouth of the river is occupied by no large seaport, the ancient *Mamora* being replaced by *Mehdiya*, a mere village standing on a cliff 500 feet above the right bank of the estuary. Leo Africanus was present when in 1515 the Mohammedan army surprised and put to the sword the six or seven thousand Portuguese

at that time occupying Mehdiya. A hundred years later the Spaniards were more fortunate, but in 1681 they were compelled in their turn to evacuate the fortress. Since then no military works guard the mouth of the river, which is almost completely choked with sands.

### Sla—Rbat.

All the trade of the country has been diverted to the twin towns of *Sla* (*Sala*, *Saleh*) and *Rbat* (*Rabat*), situated at the mouth of the Bu-Regrag, some 18 miles to the south-west. Sla, which stands on the right bank, preserves some traces of Portuguese architecture, but is not an old place, although bearing the name of the Phœnician city of *Sala*, which stood on the opposite bank, and which was replaced by the Roman colony of *Chella*. The inhabitants are mostly Andalusian Moors, who have kept alive the traditional hatred of their Christian persecutors Till recently, no non-Mussulman traveller was permitted to pass the night in Sla, and even during the day Christians and Jews avoided the place. Hence the trade and industries of the district have gravitated to Rbat, on the left bank, which has almost become a European seaport. Above the other buildings rises a graceful minaret, whose form, height, and style of ornamentation recall the famous Giralda of Seville. According to Arab tradition, both of these towers, as well as the Kutubia of Marocco, were constructed at the same epoch by Christian slaves, under the direction of the same architect. The Rbat women, heirs of the old purple-dyers who had made the name of Chella famous throughout the Roman world, still weave woollen carpets and rugs of durable texture, but the colours of which soon fade. Owing to its dangerous bar, exposed to the Atlantic surf, Rbat does little trade with Europe, regard being had to the importance of the twin towns and of the river basin, of which they are the natural outports. Vessels are often obliged to ride at anchor in the open roadstead, unable to land their goods or passengers, or else pass on to Casablanca. Rbat has often been besieged by the independent Berber tribes of the surrounding district, and to them must doubtless also be attributed the destruction of the aqueduct by which it was formerly supplied with water. The kasbah, which is strongly fortified, mounts over a hundred and sixty guns, directed both seawards and against these marauders. In it is preserved the "holy key" of the city of Cordova, which during the last war with Spain was publicly exposed for several days.

Recently, the neighbouring Beni-Hassem (Beni-Hassan) tribe has been compelled to recognise the Sultan's authority, and to allow its territory to be divided into sixteen sections, whose respective chiefs are responsible for public order. But farther east the Zemmur and Zaian Berbers are absolutely independent, allying themselves with the Sultan on a footing of equality. Jointly with a few tribes of less importance, they occupy the whole space from the coast to the Atlas, and from Meknes southwards to the Um-er-Rbia basin. This region, which is at least 16,000 square miles in extent, is closed to all subjects of the central Government unprovided with safe-conducts. The Zemmurs, occupying an extremely fertile district, are partly engaged in agriculture. But the Zaians, who are the most powerful

nation on the maritime slope of the Atlas, are exclusively stock-breeders, possessing

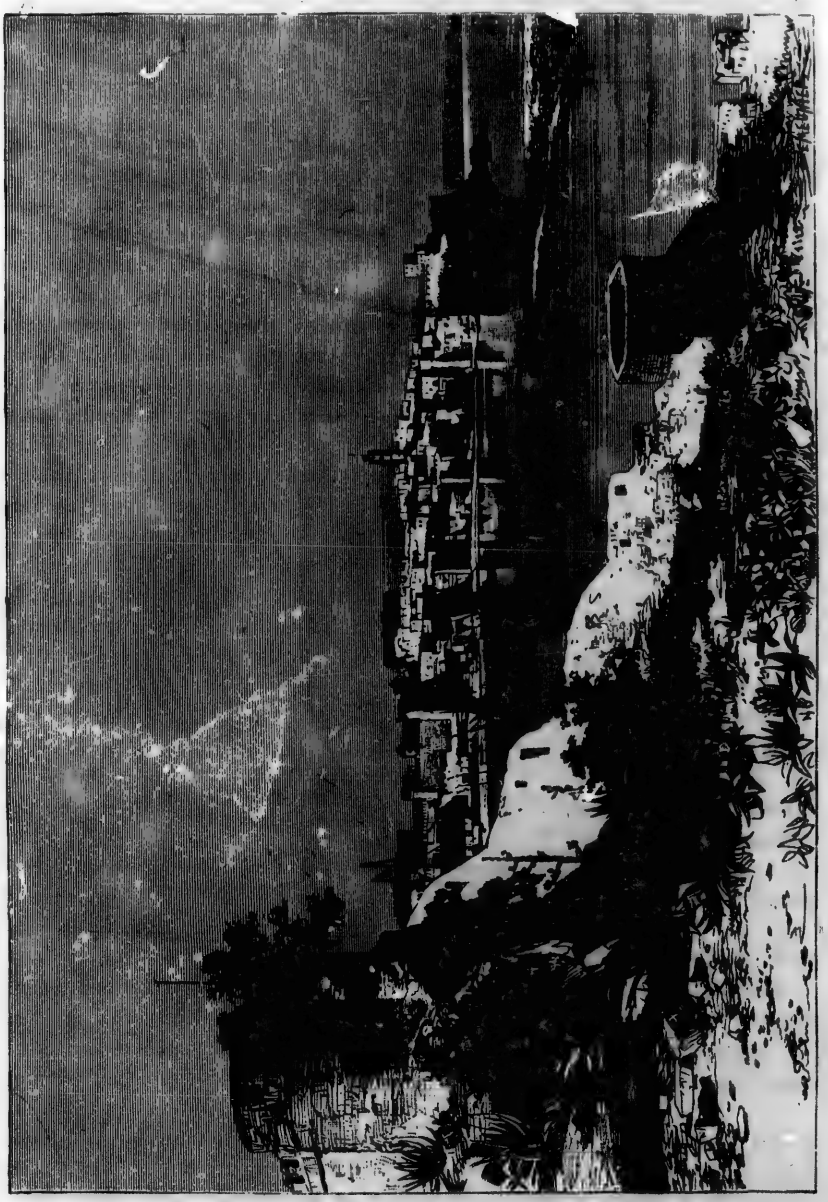


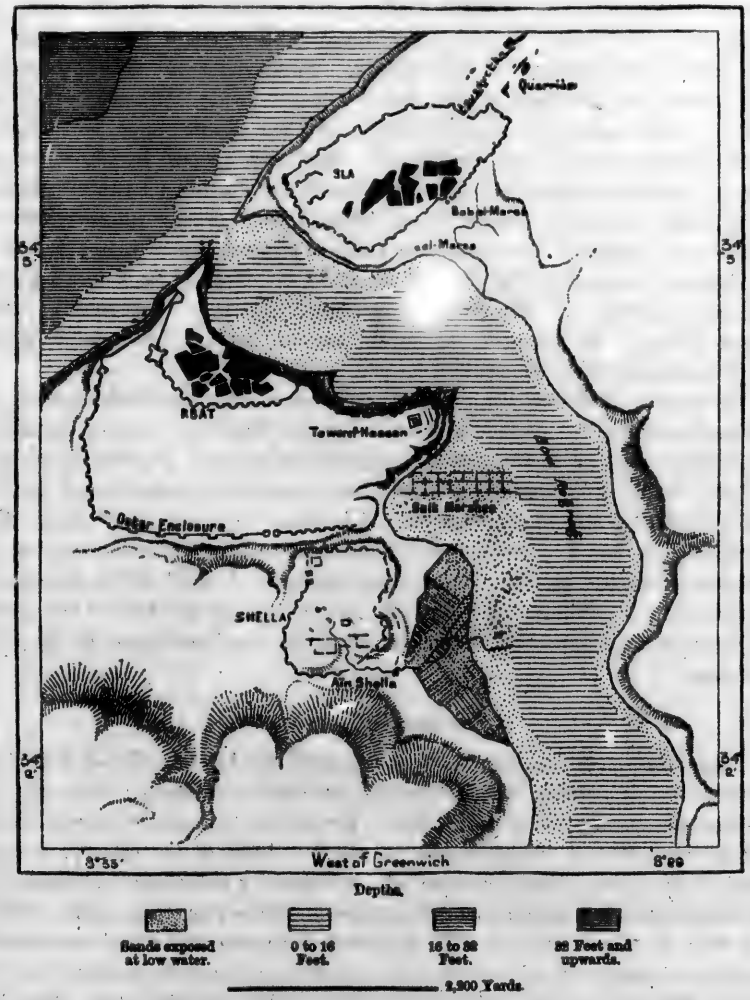
Fig. 176.—Bhat and Mouth of the Bu-Regreg—View taken from Sea.

more numerous and finer herds of cattle, camels, sheep, and goats than any other tribe in the empire.

## Casablanca—Demnata.

Between the mouths of the Sebu and Um-er-Rbia, the chief settlement is *Dar-el-Beida*, better known under its Spanish form, *Casablanca*, or the "White House."

Fig. 177.—Rbat and Sla.
Scale 1 : 65,000.




Founded in the sixteenth century by the Portuguese on the site of the mediæval town of Anfa, Casablanca owes its prosperity mainly to its roadstead, which, though badly sheltered, is deep enough to receive vessels of large tonnage. Its chief exports are maize, wool, and haricot beans, besides slippers, forwarded in thousands

through Gibraltar to Alexandria. Notwithstanding its unhealthy climate, a small European colony, chiefly French, is settled at Casablanca, which, owing to the total absence of vegetation, presents an extremely dreary aspect.

In the upper Um-er-Rbia basin, the chief centre of population is *Bu-el-Jad* a village of about two thousand inhabitants, ruled over by a *sid*, or religious sovereign, whose power is recognised by all the surrounding tribes—such as the Tadlas on the south and east, the Ait-Seri on the west, and the Shawia on the north-west. The "saint" and his kindred, nearly all of mixed blood, live on the "voluntary contributions" of the faithful. No traveller can visit the country except under the protection of Ben Daud, "Son of David," lord spiritual of Bu-el-Jad. At the end of the eighth century the whole of this region, now a hotbed of Moslem fanaticism, is said by Edrisi to have been peopled by Christians and Jews, and rumour speaks of the ruins of a church still bearing a Latin inscription.

The Tadla territory, occupied by nine nomad tribes, with a collective force of about twenty thousand horse, possesses a sort of common capital in the kasbah of *Et-Tadla*, which stands on the Um-er-Rbia, at the foot of one of the best-constructed fortresses in Marocco. The river, here nearly 135 feet wide, is spanned by a ten-arched bridge: "the largest in the world," say the natives. The produce of the neighbouring salt-mines is exported far and wide.

The fortress of *Beni-Mellal*, or *Bel Kush*, lying in the Beni-Mellal territory to the south-east, leads to the more important town of *Demnata*, which is situated in a fertile and highly productive district on one of the southern affluents of the Um-er-Rbia. Formerly a flourishing trading place, Demnata has suffered much from its fatal proximity to Marrakesh, from which it is distant not more than 60 miles. The exorbitant dues levied by the Imperial Government on all merchandise entering the town have compelled caravans to seek other markets. A third of the inhabitants are Jews, who live intermingled with the Mohammedans, but who were recently subjected to much oppressive treatment, calling for the intervention of European diplomacy.

### Azemmur—Mazagan.

After collecting all the waters descending from the Atlas, the Um-er-Rbia flows north-westwards, between the territory of the Shawia Berbers on the north and the Dukkalas, mainly Arabs, on the south. The ancient town of *Azemmur* (*Azamor*), that is, "the Olives," which stands on the left bank of the estuary, is often described as a ruin, probably because seldom visited by Europeans. Nevertheless, its fisheries and industries are sufficiently productive to support an export trade at least with the inland districts. The dangerous bar at the river mouth prevents all access to shipping, which is obliged to cast anchor 4 miles to the south-west, at the port of *Mazagan*, by the natives indifferently called *El-Jedida*, "the New," or *El-Brija*, "the Fort." Although smaller than Azemmur, Mazagan has more importance for Europeans, and especially the inhabitants of the Canary Islands, who draw their supplies of cereals, haricots, and other provisions through this outport of the fertile Dukkala plains. On the cliff above Azemmur stand the still

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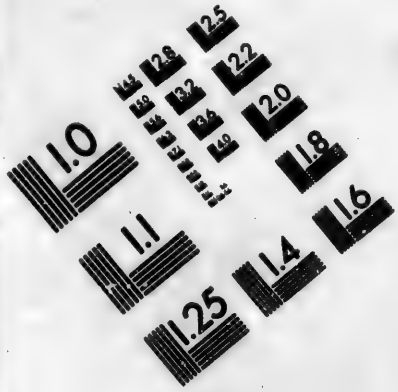


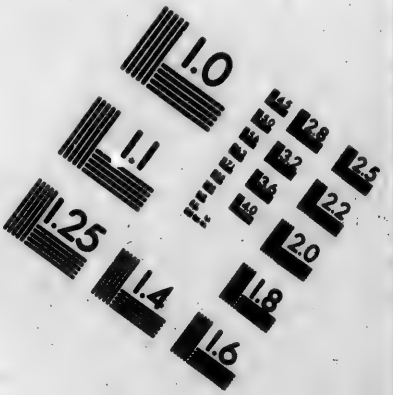


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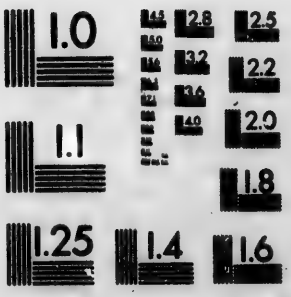


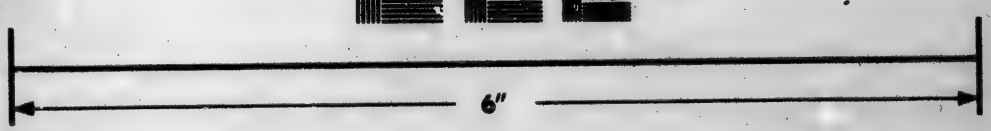


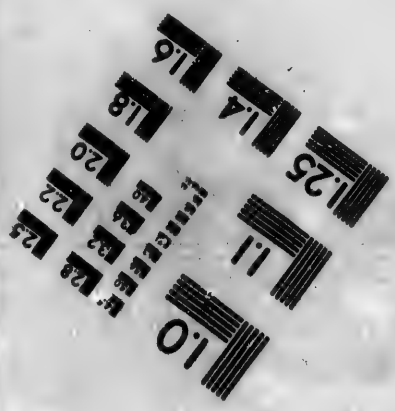


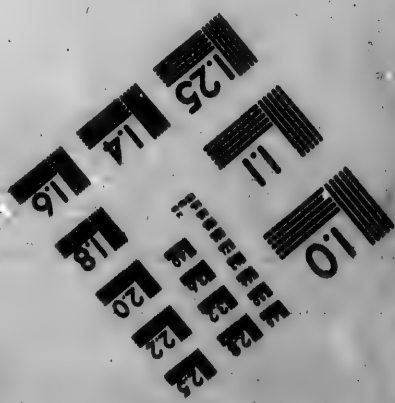


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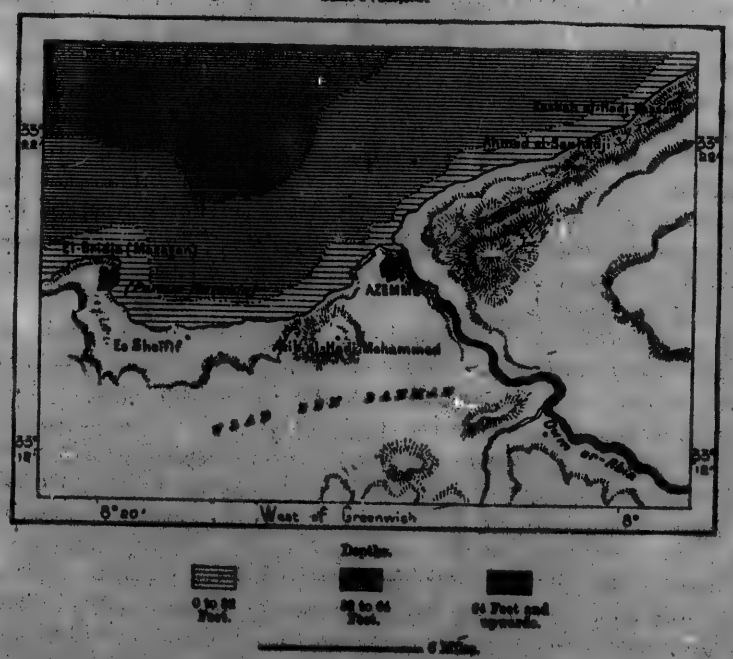
imposing ruins of the buildings erected here by the Portuguese, who held this place for over two centuries and a half, down to the year 1770.

## El-Ghaïb—Saffi.

South-east of Mazagan two breaks in the coastline, between this town and Cape Cantin, give access to the Walidiya lagoon, the ancient port of *El-Ghaïb*. According to Tissot, it would be easy to restore this harbour and make it the best on the coast. As in the time of Scylax, Cape Cantin, the Solis Mons of the ancients, is one of the

Fig. 178.—Mazagan and Azemmur.

Scale 1 : 250,000.




most venerated spots in the whole of Africa. Here are several zawyas and a whole population of theologians.

*Saffi*, the *Asfi* of the natives, lying south of Cape Cantin, although the nearest port to Marrakesh, is less frequented than Mogador, the surf being more dangerous at this point than elsewhere along the coast. Thanks to its Portuguese fortifications and citadel, with its pinnacles rising above the houses grouped on the slopes of an eminence, Saffi is the most picturesque place on the Atlantic seaboard. Its gardens are marvellously fertile, and the "House of the Seven Brethren," outside the town, is a holy place venerated by Moslem and Jew alike, and frequented by multitudes of invalids of all religions. Another place of pilgrimage is *Lalla*

*Gobustu*, "Our Lady of the Olive," a gigantic tree with enormous branches, unrivalled in the whole of Western Mauritania.

## Marocco.

*Marocco*, or rather *Marrakesh*, the *Temrakesh* of the Berbers, second capital of the empire, is the only city in the valley of the Tensift, which reaches the coast between Saffi and Mogador. Seen from without, it presents a superb aspect, reminding pilgrims of the Syrian Damascus. Approaching it from the north or north-east by the banks of the Tensift, which flows within a few miles of the city, the traveller passes through a vast plantation of several hundred thousand palms, interspersed here and there with the olive and other fruit-trees. Seen from the Mogador direction, where the route traverses a bare and stony plain, a still more imposing effect is produced by its massive walls flanked with towers, the lofty minaret of its great mosque, and the long indented line of the Atlas, hazy below, blue and streaked with snow towards the summit, bounding the eastern horizon. Standing at an elevation of 1,660 feet some 30 miles from the spurs of the Atlas, Marrakesh is abundantly supplied with water, every house possessing a separate well, every garden irrigated with a purling stream. Its equable climate also, tempered by the neighbouring mountains, is one of the most delightful in the world, reflected, so to say, in the vegetation, where plants of the temperate are intermingled with those of the tropical regions.

Marrakesh-el-Hamra, or "the Red," was founded in the second half of the eleventh century, some 24 miles north of the ancient city of *Aghmat* (*Armat*), whose inhabitants migrated to the new settlement. The capital grew rapidly, and in the following century it was already one of the "queens" of Mauritania. Although now dethroned and outstripped in population, trade, and industries by its northern rival, Fes, it is still regarded as an imperial capital, visited yearly by the Sultan. The approach of his Majesty is grimly heralded by the despatch of a number of human heads, destined to decorate the front of the palace, as a warning to unruly spirits meditating revolt. About the year 1860 the Rahmennas, one of the powerful Berber tribes in the outskirts, having broken into open rebellion, had to be forcibly dislodged before an entrance could be effected. The Berber element is numerously represented even within the walls, and on market days Tamasight is more generally spoken in the bazaars than Arabic. The Negroes are also numerous, relatively far more so than in the northern capital. As in most other towns of Marocco, the Jews, though now protected by the Israelitish Alliance, are still confined to a mellah, or separate quarter, enclosed by ramparts, which they cannot cross except barefooted and with downcast eyes.

Notwithstanding its imposing external aspect, Marrakesh presents inside the appearance of a decayed city. The ramparts, about 7 miles in circuit, not including the walls of the imperial park south of the city, are interrupted by wide breaches; the thoroughfares leading to the seven gates are in many places lined more with ruins than with houses; more than half of the area comprised within the enclosures

is occupied with waste spaces and gardens often lying fallow. The streets,

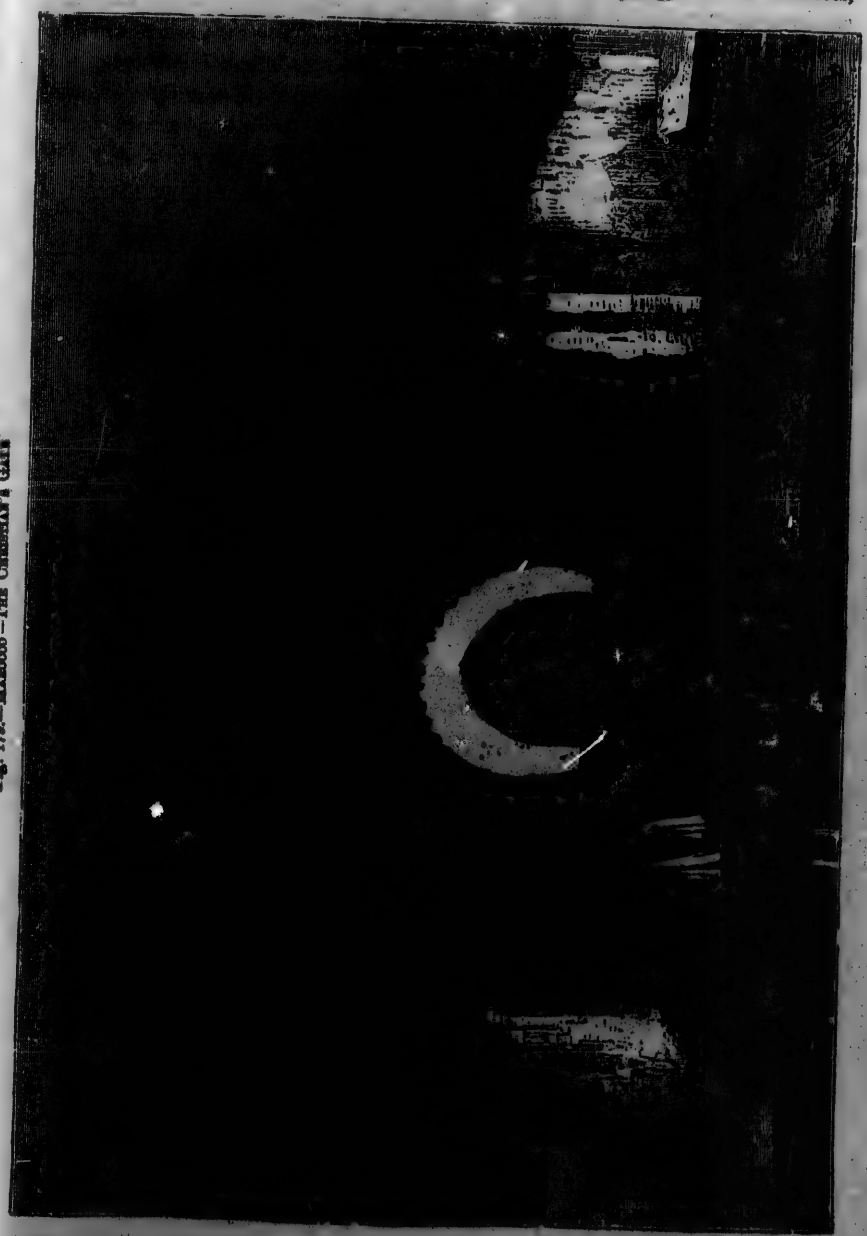
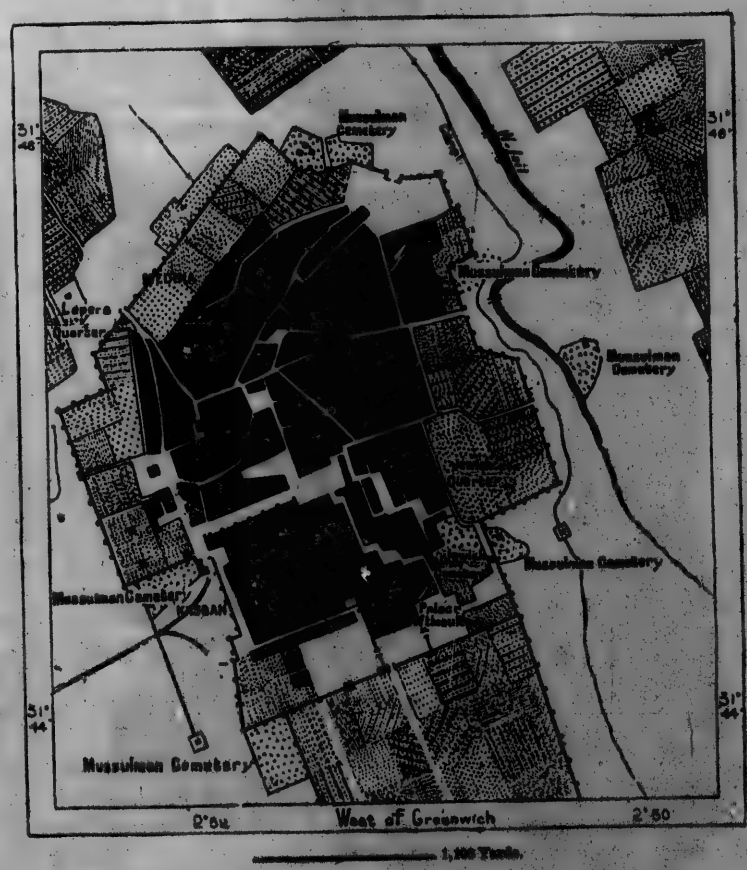


Fig. 179.—Marocco.—The Ommiad's Gate

sufficiently wide near the gates, merge towards the centre in a labyrinth of narrow lanes encumbered with filth. Most of the houses have a mean appearance, and of

the monuments, mostly in ruins, one alone can be called fine. This is the mosque of Kutubia, or rather of the Kutsubia, that is, of "the Calligraphers," so named from the writers whose booths adjoin the sacred edifice. The lofty tower dominating the mosque, apparently raised by the architect of the Sevillian Giralda and of the Hassan tower at Rbat, is the finest and highest of the three. Two of the city gates,

Fig. 180.—Marrakesh.
Scale 1 : 80,000.




one leading to the palace, the other to a mosque, are said to have been transported block by block from Spain.

The local industries have greatly fallen off. Whole streets, formerly inhabited by carriers, are now deserted, and the famous "Morocco" wares formerly prepared by the Moors exiled from Cordova are no longer produced in Marrakesh. The best leatherwork is now made in Fez, although the southern capital still does a large trade in skins with the southern districts of the Atlas. The Marrakesh

carpets are carefully woven, yet less esteemed than those of Rbat. At present the chief occupation of the inhabitants is gardening. One of the orchards comprised within the enclosures of the imperial grounds is said to yield a yearly crop of fruits valued at £20,000. The zone of gardens stretches for miles in the direction of the hills, and the hamlets occupied by horticulturists are grouped in large numbers round the ramparts. One of these towards the north-west is exclusively inhabited by a community of lepers, who enjoy self-government, forming a little commonwealth, with its bazaar, prison, Jewish quarter, and mosque dedicated to a patron saint. Towards the south are still visible a few vestiges of the ancient Aghmat, which was formerly capital of the Lamtunas, better known by the name of Mrabotin, that is, the Almoravides, or "marabuts." An upland valley to the east of Marrakesh is held by the powerful confederation of the Tiffas, of Zenaga stock.

## Mogador.

At present the chief port of Marrakesh is *Suoira*, "the Beautiful," better known to Europeans by the name of *Mogador*, from a shrine erected to a "Saint" Mogdal or Mogdul, over a mile to the south of the town. At this point a harbour formerly existed, as shown by a Spanish map dated 1608. But the present town, which ranks as a seaport next in importance to Tangier and Casablanca, was built a little over a century ago, between the years 1760 and 1773, mainly by French prisoners captured at the time of the disastrous expedition of Larash in 1765. Laid out on a regular plan, Mogador presents a somewhat monotonous aspect, with its uniform blocks of houses, perfect cubes in form, and painted a dull grey colour. It stands at the extremity of a sandy spit stretching southwards, and separated by a channel from a fortified island, which defends the shallow and exposed roadstead. The guns spiked at the time of the French bombardment in 1844 have not yet been replaced, and the projectiles launched by the French fleet still lie strewn at the foot of the ramparts.

The commercial importance of Mogador is due to the fact that it is the outport not only of Marrakesh, but of all the southern Atlas districts, its chief exports to Europe being such local produce as cereals, oils, fruits, hides, gums, wools, and alfa grass. Like that of Safi, the coastline has here been modified either by erosion or by a subsidence of the soil. In the middle of the present century cattle could easily pass at low water from the Mogador peninsula to the neighbouring island, from which it is now separated by a navigable channel.

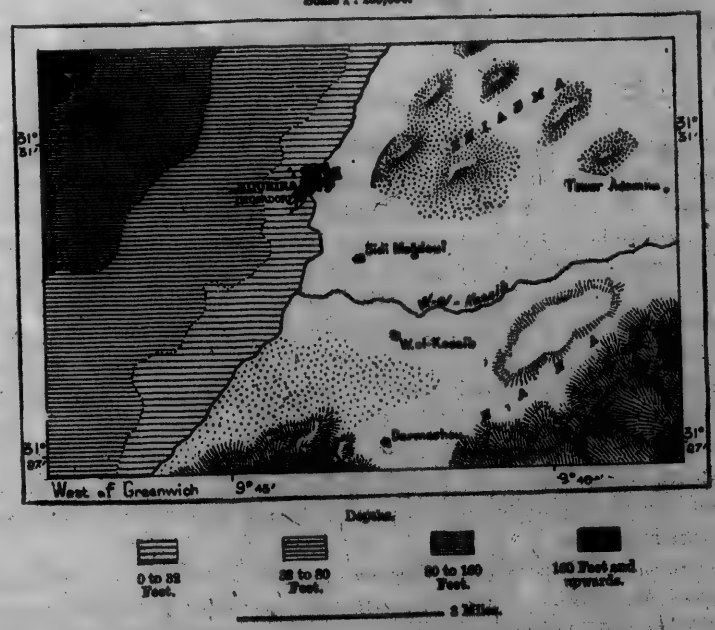
The chief Arab, or at least Arabised, tribes in the Mogador district belong to the powerful Shiadma confederation, which, while refusing to pay tribute, allows free passage to caravans, and recognises the suzerainty of the Sultan. Its villages and convents are scattered over a large tract south of the Wed Tensift between the Jebal-el-Hadid and the advanced spurs of the Atlas.

South of Mogador, in the direction of the headland terminating the main Atlas range, no more towns or even scattered hamlets are now to be seen. Here all the natives live in groups of four or five families in strong stone fortalices, generally of

square form, flanked at two angles with high towers, and enclosed by a ditch. The ground floor is occupied by the cattle, while the upper story, approached by a ladder which may be removed in time of danger, is disposed in as many chambers as there are families in the stronghold. Such are the means devised for their mutual protection by the local Haha Berbers, who are settled agriculturists exposed to the raids of the nomad Saharian Arabs. They, however, in their turn occasionally fall on passing caravans, so that traders never venture to enter their territory unarmed or in small bodies. The various *idan*, or clans, constituting

Fig. 181.—Mogador and Neighbourhood.

Scale 1 : 150,000.




the Haha confederacy, have been estimated by Alvarez Perez at two hundred and eighty thousand souls.

The well-watered and highly productive Sûs valley abounds in large villages surrounded by palm, olive, and orange groves. The district is entirely occupied by an industrious peasantry free from the razzias of marauding nomads. Formerly the well-defined basin of the Sûs constituted an autonomous state, whose inhabitants were noted in mediæval times for their industry, learning, and enterprising spirit. At present they are known in the Musulman world chiefly as strolling dancers, jugglers, and snake-charmers, who emigrate in large numbers to every part of Mauritania, and even at times find their way to Europe. They constitute a sort of guild, placed under the patronage of a "Saint" Mohammed-ben-Musa, whose name is always invoked before beginning their performances. From the Sûs country,

according to certain local Mussulman prophecies, is one day to go forth the Mahdi, who is destined to renew the face of the earth, and who "shall fill the world with as much righteousness as it is now filled with wickedness."

## Tarudant.

Officially the Wed Sûs belongs to the empire, and the Sultan's envoys are here received with honour. Nevertheless most of the tribes are still independent, and the only effect of the suzerain's intervention, who divides in order one day to rule, is to increase their internal feuds and foment a perpetual state of intestine warfare. The natives are for the most part Berbers of somewhat mixed origin, although the Awaras, one of the largest confederations, call themselves Arabs. They comprise seven tribes occupying the southern slope of the Atlas in the immediate vicinity of the Bibawan pass. Like the Hahas of the opposite declivity, they dwell in strongholds erected on isolated bluffs and headlands, whence a view is commanded of the approaching enemy, or of peaceful caravans inviting attack. The Shtuga confederation, which holds the whole region between the Atlantic and Tarudant, consists exclusively of Berber tribes.

*Tarudant*, capital of the Sûs basin, lies a little to the north of the river, in a vast plain which rises gradually towards the hills occupied by the Awaras, and towards the southern escarpments of the Atlas. According to Rohlfs, Tarudant covers a larger area than Fes; but far more gardens and olive groves than groups of habitations are comprised within its irregular enclosures flanked by earthen towers at intervals of 200 or 300 feet. Towards the centre, however, vegetation gives place to a real town, with narrow winding streets commanded on the north-east by a strongly built citadel. Its chief industries are leather-dressing, weaving, dyeing, and especially copperware for the markets of Kuka, Kano, and Timbuktu in the Sudan. This industry was originally created by the copper mines of the neighbouring Atlas hills to the north; but at present nearly all the crude metal is imported from England. The sugar plantations, which in the time of Leo Africanus constituted the chief wealth of Tarudant, have long ceased to exist.

## Agadir—Sakiet-el-Hamra.

The natural outport of the Sûs basin is *Agadir*, standing a little to the north of the estuary which forms the best harbour on the Morocco seaboard. The inlet is sheltered from the east and north winds on the north-west by Cape Gher (Jebel Ait-Wakal), the extreme headland of the Atlas range. At the head of the bay another cape, formed by a projecting lateral ridge, encloses the harbour proper, completely protecting it from the open surf. A group of huts at the foot of this ridge is supplied with water by a copious spring, and the port is commanded by an agadir, or "rampart," whence Agadir-ne-Irir, or "Cape Rampart," the full designation of this seaport.

Held by the Portuguese since the beginning of the sixteenth century, and by

them re-named Santa-Cruz, Agadir rose to considerable commercial prosperity. Even under native rule it continued for a time to flourish as the outport of the produce brought by caravans from the Niger regions. But its distance from the centre of the empire tempting its inhabitants to strike for their independence, Agadir was destroyed by Sultan Mohammed and replaced by Mogador, lying farther north. As a military outpost, Agadir marked till recently the real limit of the imperial administration on the Atlantic seaboard. But the foundation of a Spanish settlement in the neighbourhood has induced the Sultan to consolidate his power on this southern frontier by building the new town of *Tisnit* on a cliff some 12 miles farther inland. The village of *Aglu* (*Agula*), 18 miles south from the

Fig. 182.—Tarudant.

Scale 1 : 87,000.

3,000 Yards.

mouth of the Wed-el-Ghâs, is destined to become the outport of Tisnit. In the twelfth century the power of the Almohades reached still farther south, and Abd-el-Mumen is said to have had the distance carefully measured between the two extremities of his empire, from Barka to the Wed Nun.

At present the imperial authority ceases altogether a little south of the Sûs, although indicated on the maps as extending to *Sakiet-el-Hamra*, south of Cape Jubi. An uninhabited tract even forms a sort of borderland to the south of the territory recognising the Sultan's jurisdiction. This is the upper valley of the Wed-el-Ghâs (Ras, Welghâs), one of the best watered and most fertile in the whole of Mauritania, but condemned to desolation by frontier warfare and diplomacy. The petty states south of the Ghâs are all peopled by Berbers and Negroes, who serve as intermediaries of commercial intercourse between Morocco

and Sudan. Most of them call themselves Guezzula, or Jelula, a term analogous to the Gueshtula of Kabylia, and possibly identical with the Numidian Getulæ of ancient writers.

Of all these petty maritime states the most important, although not the largest, is that commonly known as "the kingdom of Sidi Hesham," from a recently reigning sheikh, in whose family the supreme power is still centred. In virtue of its genealogical relations it even claims a right to the imperial crown. The proper name of the district is Tazzerult, which is also that of a stream flowing from the slopes of the Little Atlas. The natives cultivate barley and wheat, and also work some local mines; but their chief pursuit is the breeding of camels, partly exported, partly employed by them in the caravan trade across the Sahara. Every three years a large mugar, or fair, is held near the zawya of Sidi-Hamed-ben-Musa, ancestor of the reigning prince, and on these occasions as many as four or five thousand camels are collected on the spot. The present sheikh has removed the former interdict excluding the Jews from this market, and in order to attract trade to his territory he even holds himself personally responsible for the public security, indemnifying traders plundered on the route through the unsettled districts of the Awaras and other marauders.

## Ilegh—Ogulmin.

*Ilegh*, capital of Tazzerult, standing, according to Lenz, at an elevation of 1,530 feet, is largely inhabited by Sudanese Negroes. The army of the sheikh, who is himself a black, is composed entirely of slaves from every part of Sudan, including even some Fulahs. As in Nigritia, blue garments are the prevailing colour, and, like the Tuaregs, the men go partly veiled, while the women walk abroad uncovered.

Towards the source of the Wed Tazzerult an isolated volcanic cone is crowned by the impregnable stronghold of *Agadir*, marking the southern limit of "the kingdom of Sidi Hesham," here conterminous with the territory of the Mejed Berbers. The waters descending from the southern slope of the Anti-Atlas flow to the Wed Nun, whose basin is divided into several petty states, the chief of which near the coast usually takes the name of the river itself. The natives have for centuries been dreaded by the fishermen from the Canaries and other mariners, all vessels running aground on these inhospitable shores being regarded as legitimate prize, and the crews mostly enslaved.

*Ogulmin*, capital of the state, and usually known as *Wed-Nun*, stands at an elevation of probably over 3,000 feet, too high for dates to ripen. Beyond the oasis encircling the town nothing is visible except an amphitheatre of bare arid hills, said by the natives to abound in silver and copper ores. Ogulmin is one of the chief trading stations between Mogador and Timbuktu; but it is above all a great depôt for slaves from Sudan. To Mogador, besides slaves, it sends ostrich feathers, a little gold dust, horses and mules of good stock, and sheep. It belongs to the Ait Hassan tribe, with whom the local Jews are said to live on a footing

of perfect equality. They are probably Berbers converted to Judaism before the arrival of the Arabs; hence, having had no hand in the death of the "Lord Jesus," they are exempt from the load of reprobation weighing on the other Israelites.

### Tizzi—Santa Cruz—Ifni.

Some 24 miles farther east lies the town of *Tizzi* or *Pum-el-Hosun*, which belongs to the Maribda Arab community. It stands, according to Lenz, at an altitude of 1,600 feet, in an admirable position at the mouth of a rocky gorge commanded by pyramidal mountains. An oasis of palms follows the course of a stream, whose waters sometimes reach the Wed Nun. On a hill to the north are some ruins attributed by the natives, apparently with good reason, to the Romans. In the district occur other remains, such as continuous ramparts like the wall of China, high towers with sculptured pinnacles, tombs and inscribed rocks like those found in large numbers throughout Mauritania from Tripolitana to Morocco. These carvings comprise inscriptions in the Tefinegh (Berber) character, besides figures of animals, including the elephant, rhinoceros, horse, and giraffe. The human figure nowhere occurs, although arms, garments, and other works of man are represented on these mysterious petroglyphs.

In the region comprised between the Weds Ilegh and Nun, Spain apparently intends to establish the centre of administration for the new territory acquired by the treaty concluded with Morocco in 1860. In virtue of a special clause, the Spanish Government reserves the right to re-occupy the port of *Santa Cruz de Mar Pequeña* (*Mar Menor* or *Mar Chica*), which it held for twenty years, from 1507 to 1527. But the very site of this former conquest can no longer be determined with certainty, and it is doubtful whether any vestiges remain of the *Agadir* or *Gwader* razed to the ground by the natives. Nevertheless, fearing to be involved in fresh complications through the incursions of hostile tribes, the Sultan's Government reluctantly ceded a strip of land in a territory over which it exercised no jurisdiction, offering instead either a large indemnity, or the Bay of Agnas, on the Mediterranean coast, over against the Zaffarine Islands, or even an extension of the Ceuta district. But Spain was obdurate, and a special expedition commissioned to discover the lost port of Santa Cruz has reported in favour of the *Ifni* inlet, 18 miles north-east of the Wed Nun estuary, near which were found some ruins of Spanish or Portuguese construction. The harbour of Ifni, the choice of which was ratified by the Sultan in 1883, has the great advantage of proximity to the Ogulmin market, and of easy access to the rich plains of the Wed-el-Ghâs and Wed Sûs; and if selected with a view to further conquest, it has also the advantage above all other places in dispute of lying most to the north, that is, nearest to the Morocco frontier. Ifni, however, answers in no respect to the description of Santa Cruz de Mar Pequeña contained in the documents of the sixteenth century. Galiano thinks he has found the true position of the old Spanish port at *Boca Grande*, on the mouth of the Wed Shibika and about midway between *Puerto Cansado* and the Wed Draa estuary.

## The Draa Basin.

This estuary exactly faces the island of Lanzarote in the Canary Archipelago, while the Wed itself has its source at least 330 miles east of Marrakesh in the Atlas highlands. The inhabitants of its basin, estimated by Rohlfs at two hundred

Fig. 183.—Iffni and Neighbouring Coast.
Scale 1 : 1,000,000.

and fifty thousands souls, are almost exclusively of Berber stock and speech, and here is found the Beraber or Braber tribe which has preserved the very name of the race. A few hamlets, however, are exclusively inhabited by Shorfa Arabs,

members of the Prophet's family, while some of the Beni-Mohammed (Beni-Mahmid) nation are scattered over the district. The Negroes also form small colonies in every oasis, and their blood is mixed with that of the other inhabitants. The Jews are represented in all the villages as artisans, although Jewish traders are comparatively less numerous on the southern than on the opposite slope of the Atlas.

All the oases in the Draa basin are independent, or at most yield a nominal submission to the authority of the Sultan. In many respects the natives of this region appear to be more civilised than those of the western provinces. Their dwellings especially are more elegant, adorned with terraces and turrets, provided with balustrades and decorated with mouldings.

All the Upper Draa Valley, from the Tagherut pass to and beyond the confluence of the Dades river, is occupied by the Glawa people. Their chief place is *Tikirt*, on the northern verge of an arid stony plain stretching southwards in the direction of the Anti-Atlas. Before entering the gorge piercing this range, the Draa is joined by the Dades, whose banks are cultivated and lined with houses wherever sufficient space is afforded between the torrent and its rocky walls. Here every hamlet is guarded by a square tower 30 or 40 feet high, from which the inhabitants keep up a constant fire whenever war breaks out between two conterminous clans. These feuds are generally due to disputes about the irrigation canals; otherwise the people are peaceful enough, the various villages appointing their delegates to a common jemâa or assembly, which takes measures against the hostile Aït-Attas. The natives of Dades claim to have long possessed a special remedy against ophthalmia, and their eye-doctors yearly visit every part of Mauritania in the exercise of their art.

Beyond the Anti-Atlas gorges both banks of the Draa are lined by an almost continuous village, to the point where the river enters the desert and trends to the south-west. The population, chiefly Haratins, or black Berbers, have converted the whole region for 120 miles, from the Mesquita to the Ktawa district, into a vast garden. Their palms yield the best dates in Western Mauritania, and in such quantities that at the time of Rohlf's visit a load of 375 lbs. was sold for two francs. Besides dates, the country yields some cereals, cabbages, onions, turnips, carrots, tomatos, melons, and in the south liquorice-root.

In the Wed Draa the chief town is *Tamagrat*, on the right bank of the stream over against the extremity of the Bani range. It is regarded as a sort of capital, thanks to its important market, and to the religious influence of its zawya, dedicated to Sidi Hamed-ben-Nasser. But a more populous place is *Beni-Sbih*, chief town of the rich Ktawa district and of the Beni-Mohammed nation. The village of *Zair*, in the Harib territory, is the starting-point of caravans for the Sudan.

### Tisent—Tatta

West of the Upper Draa the quadrilateral space bounded north by the Anti-Atlas, south by the dry bed of the Lower Draa, is occupied by a few oases, such as

*Tazenakht*, traversed by the river of like name, and *Tissent*, an almost unbroken forest watered by numerous springs. The Tissent River is perennial, but so brackish that the natives suppose it flows from the sea. Although calling themselves Shellahas, the inhabitants are nearly all Haratins, who wear a blue kesh-kaba (smock) like the Sudanese Negroes. They are famed for their religious zeal, their great ambition being to make the pilgrimage to Mecca.

The pastoral and agricultural Berbers of the neighbouring hills belong to the great Zenaga (Sanheja) family, whose name they bear. Proud of their origin, they keep aloof from contact with aliens, and all speak Tamasight exclusively. De Foucauld describes them as a tall thin people, athletic but ill-favoured, with a deep bronze complexion. They are feared as warriors, although less so than the Dui-Bellal Arabs of the plain, present suzerains and protectors of the Tissent oasis. These Arabs, formerly without rivals between the Atlas and the Niger, have been so reduced by intestine strife, that in 1883, at the time of De Foucauld's visit, the tribe could muster no more than eighteen hundred armed men. For the purity of their Arab speech, handsome features, graceful carriage, and courteous manners, they are distinguished above all other nomads of South Morocco.

West of Tissent follows the *Tatta* oasis, which has been almost ruined by the Dui-Bellals, who when called in as allies remained as oppressors. Tatta is the largest oasis between the Draa and the Atlantic, but is divided into several distinct groups surrounded by the desert. Like *Akka*, which lies farther west near the sources of the Nun, it has ceased to be one of the centres of trade between Mogador and Timbuktu. The Jewish jewellers of Akka were formerly noted for their artistic skill; but arts and commerce have alike perished, and the people now depend exclusively on the produce of their palm groves. Here was born the Rabbi Mardochai, one of the few travellers that have described their visit to Timbuktu.

## Mriminia—Ferkla.

At present the chief market in the Wed Draa region is *Mriminia* (*Rasmimia*), lying south of the Beni range on the Wed Zeguid, a perennial stream abounding in fish. The influential zawya of Sidi Abd-Allah, with the shrines of his ancestors, forms the centre of the village, round which are grouped the huts of the free Haratins and slaves. The annual fair of Mriminia, which lasts three days, is frequented by traders from every part of the Draa and Sus basins, and from Tafilelt. It is second in importance only to that of Sidi Hammed-ben-Musa in the Tazzerult district. Between the two lies the market of *Suk-el-Mulak*, in the territory of the Ait-Yusef tribe.

East of the long Wed Draa oasis, the chief Berber peoples are the warlike Ait-Sedrats and Ait-Attas, nomads on the steppe, settled agriculturists in the riverain tracts along the Todra, Zis, and other streams, which after meeting in the Tafilelt country are lost in the desert. Among the oases of this region are *Todra* (*Todgha*), a narrow strip of cultivated land extending north and south in the depression between the Great Atlas and the southern range, and the far less extensive *Ferkla*,

lower down on the same river. Some of the Ferkla palm groves belong to the powerful Aït-Mebrad tribe, who gained a sanguinary victory over the Aït-Attas in 1883.

### The Zis Basin.

Far more populous than the Todra Valley is that of the Zis, which flows southwards from the Tizi'at-er-Riut pass in the Great Atlas, along the historic caravan route between Fez and Timbuktu. The upper valley of the Zis (Guers), inhabited by the Aït-Sdig Berbers, has been described as "another Italy" in the variety of its products and equable climate. The banks of the stream form a continuous garden, dotted over with villages whose houses are built of baked earth mixed with straw and pebbles. Farther down the palm groves form an uninterrupted plantation extending from oasis to oasis as far as the desert.

*Mdaghra*, the first of the groves belonging to this region comprised under the generic name of Tafilelt, is one of the richest and most densely peopled on the Sahara slope, comprising about forty villages, some of which are of considerable extent. The largest is *Kasbah-el-Kedima*, or "the Old Fort," which has a population of fifteen hundred souls. The dates, like the grapes, olives, peaches, and other fruits of Mdaghra, are all of exquisite flavour, and this oasis might be an earthly Eden but for the rivalries of its Arab, Berber, and Jewish inhabitants. Many are reduced to great want, and over two-thirds are said to suffer from various forms of ophthalmia.

### Tafilelt Oasis.

South of Mdaghra, most of the natives belong to the powerful Aït-Atta confederation, which extends westwards to the Wad Draa. According to the local tradition, about one hundred years ago the Aït-Attas expelled the Shorfa Arabs from this part of Tafilelt, which takes the name of *Ertib* or *Retab*. Their women, who go unveiled, are distinguished from most others in Morocco by the practice of tattooing different parts of the body. *Es-Zorigat*, capital of Ertib, is probably the largest town in the whole of Tafilelt, mustering, according to Rohlfs, over twelve hundred armed men. At *Dsera*, a little lower down, the Zis runs out in the sands in summer, reappearing, however, in the Tisimi oasis. Farther on the stream again disappears, leaving the inhabitants of South Tafilelt without surface water till the returning spring. Then the Zis, swollen by the melting snows of the Atlas, overflows its banks, converting the oasis into a lake. The Dayra-el-Dsera sebkha, which receives all the waters from the eastern Atlas, is also transformed to a temporary lake during the floods.

The oasis which is specially known by the name of Tafilelt or Tafilala, is the centre of the largest population in the whole of the Sahara, estimated by Rohlfs at not less than one hundred thousand souls, grouped in more than a hundred and fifty ksars or villages. The district, covering an area of probably 400 square miles, is almost completely enclosed by an amphitheatre of hills, being open only in the north through the Zis Valley, and in the south-east towards the desert.

Besides dates, some wheat, barley, and clover are grown, whenever the winter floods have been sufficiently copious. Till recently the population was almost exclusively Arab, but at present it is mixed, the Ait-Atta Berbers having seized a large number of the villages. In Tafilelt, as elsewhere in Marocco and in Algeria, the conquering Arabs are thus being everywhere crowded out by the aboriginal Berber race.

Fig. 184.—Wad Ziz and Tafilelt Oasis.
Scale 1 : 1,200,000.

Villages.

## Er-Rissani—Amra.

Tafilelt has two capitals scarcely separated by a stone's throw—*Er-Rissani*, residence of the governor, in the north-east, and in the south-west *Abuam* or *Bu-Aam*, where the traders chiefly resort. The latter, the largest and wealthiest place in the whole oasis, is the chief market for the Sahara between Twat and the Wed Draa. Here all the industries are grouped in separate quarters—in one place clothiers, in another dealers in oil, butter, and soap; elsewhere armourers, carpenters, saddlers, and the leather-workers who were for centuries the glory of Tafilelt. Its famous jild el-filali, or skins tanned with an indigenous plant, doubtless an acacia, are still forwarded to Fez and Tlemcen. From Sudan are imported ostrich feathers, some gold dust and slaves. Most European wares are introduced chiefly from Algeria, although tea still continues to be purchased from English dealers. As in Marocco, the circulating medium is almost exclusively five-franc pieces.

The governor is always a brother or near relation of the Sultan; but his

authority is powerless against the will of the communal assemblies. He cannot even prevent the inhabitants of his own ksar from waging war against their neighbours. Tafilelt, the original home of his family, is the Berber form of Filal, a district in Arabia, whence are supposed to have come the ancestors of Mulai Ali-Sherif, founder of the Morocco dynasty. His tomb is still shown, 2½ miles south-east of Abuam.

West of the present capital stretches an extensive plain, strewn with the ruins of *Amra*, at least 5 miles in circumference, in the centre of which stand a minaret and the arches of a mosque covered with exquisite arabesques as fresh as if sculptured yesterday. Amra, or *Medinet-el-Aamera*, "the populous city," is almost certainly the famous *Sejelmassa* (*Sijilmassa*) mentioned by mediæval writers, which geographers long sought for beyond the oasis, until it was shown by Walckenaer and D'Avezac that the names Tafilelt and Sejelmassa are identical. It was founded over a hundred years after the Hejira, and although frequently ruined by sieges and wars, it continued to serve as the governor's residence down to the close of the seventeenth century, when the present fort Er-Rissani was erected. Till the year 1815, the mosque was a centre of Koranic studies, where five hundred students were supported at the expense of the state; and ever since the middle of the century the public prayer for the emperor of Morocco was still read every Friday.

The fluvial basin east of the Zis, although more extensive, contains a less volume of water. Nevertheless the traveller passing north of the great hamâda can always depend on finding a spring or stream, pastures and habitations, at every station. The Sultan's forces never penetrate into this region, although his spiritual suzerainty is recognised by the natives. The country, however, has been several times traversed by French detachments in pursuit of Algerian rebels. In 1870, Wimpffen's column reconnoitred a part of the Upper Guir basin close to the Tafilelt oasis, and 150 miles from the Oran frontier. The chief tribes inhabiting this borderland of the desert are the Berabers, the Beni-Guils, Dui-Menias, and Ulad-Jerirs. The Beni-Guil Berbers are chiefly centred on the upland pastures about the headstreams of the Weds Guir, Kenatsa, and Zusfana, while the Dui-Menia and Ulad-Jerir Arabs, kinsmen of the Algerian Hamiana, lie nearer to the desert. All are often collectively known by the general name of Zegdu, or "Confederates."

### The Guir Basin.

The farthest sources of the Guir, that is, "River," rise on the plateaux near the headstreams of the Moluya, flowing thence in deep gorges through the southern escarpments of the hills skirting the Sahara. *Ain-Shair*, the chief oasis in this upland region, grows a few dates; but, as indicated by its name, its chief source of wealth is cereals, exported to all the lower oases. In the Dui-Menia territory beyond the mountain gorges, the bed of the Guir is so wide that it takes the name of Bahariat, or "Little Sea." Here it ramifies into innumerable rivulets flowing between forests of tamarisks, or watering the open cultivated tracts. Immediately

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west of this verdant depression, which was formerly a lacustrine basin, the Guir is separated from the Zis basin by one of the dreariest and most dreaded regions in the desert. Although sometimes called the Hamáda-el-Kebir, or "Great Hamáda," it cannot compare in extent with many other plateaux of the Sahara, being scarcely 60 miles broad; but it is extremely difficult to traverse, owing to the small sharp stones strewn over the surface. Its mean altitude is about 2,600 feet, rising very

Fig. 184.—El-Hamáda of the Wed Guir.

Scale 1 : 190,000.

gradually from the banks of the Wed Guir westwards, and falling suddenly towards the Tafilelt oases. On the verge of the desert between Tafilelt and the Algerian frontier stand the two religious cities of *Es-Sahali*, on the upper Guir, and *Kenatsa*, near the source of the Wed Kenatsa. The former is governed by a "chief of chiefs" of the Nasiria order, who has a right to a share in all the offerings made to the members of the other confraternities. Kenatsa also has a zawya of the Sidi Bu-

Zian order, dating from the eleventh century, much revered by the surrounding nomads. On the route to the Boenam oasis west of Kenatsa, the Beni-Sithe Kabyles work some lead and antimony mines in a neighbouring hill.

### The Figuig Oasis.

In the upper Wed Guir basin the most populous oasis is that of Figuig, about 30 miles from the conventional line accepted as the frontier between Algeria and

Fig. 186.—Figuig Oasis.

Scale 1 : 100,000.

Morocco. The fifteen thousand inhabitants of Figuig, nearly all members of the Amur tribe, bear a great reputation for prowess throughout the Sahara, due to the belief that in the conflicts with the French they must have remained victorious, seeing that the oasis has not yet been seized by France.

Figuig, which stands at a mean elevation of over 3,400 feet, is encircled by hills rising irregularly on the plateau from 600 to 1,300 feet above the palm groves on the plain. A river, or rather a watercourse, with a few pools here and there, winds north of the oasis, sweeping round west and south to its junction with the Zusfana, one of the main branches of the Guir. At Figuig it is known as the Wed-el-Halluf, but this name changes from gorge to gorge, and from confluence to confluence.

Figuig, which still produces excellent dates, stands on the natural limit between the region of the plateaux and the Sahara, where alfa grass begins to be replaced by drin, the characteristic plant of the desert. The largest village within the common enclosure of the oases lies at the south-west angle, and bears the name of *Zenaga*, recalling the ancient confederation of the Zenagas or Sanhejas, whose members are scattered over North Africa from Tunis to Senegal. So precious is water in this oasis that a *khorruba*, that is, the right to a third of a spring twice a month for an hour each time, costs £24 in Zenaga.

The natives are distinguished by their handsome features and dignified bearing. Amongst them, as amongst so many other Berber communities, light hair and blue eyes are by no means rare. Beyond the enclosure they hold two other villages, *Tarla* and *Beni-Unif*, lying to the south, while numerous groups of tents are scattered over the slopes of the hills. All the *jalia*, or outer oases, belong to the Zenagas, who, being unable to cultivate all their plantations, allow them to remain unproductive every third year. The whole group of oases, containing about two hundred thousand palms, constitutes a little commonwealth, whose affairs are administered by a general assembly of all the villages, which usually meets four times a year. Every village has its mosque and school, frequented by students from far and wide. Lying close to the Algerian frontier, and serving as a refuge for rebels and deserters, Figuig has naturally a political importance out of all proportion with its size and population. The natives emigrate in large numbers. They are said to be excellent builders and skilful miners, and their women occupy themselves with dyeing, weaving, and embroidering cotton and woollen textiles. A few Jews reside in the oases, but they are forbidden, "under pain of death," either to lend money or acquire land or houses.

Figuig lies near one of the future highways of the Sahara. But here the vital point is *Igli*, at the junction of the Guir and Zusfana, whose united waters form the Wed Saura. The oasis at the confluence forms an indispensable caravan station, where converge the main routes from Algeria, Marocco, and Twat. Igli is inhabited by members of the Dui-Meni and Ulad Sidi-Sheikh tribes. Between it and Figuig the largest palm groves of the Zusfana Valley contain about one hundred thousand dates belonging to the rich Beni-Gumi tribe, vassals of the Dui-Menias.

## Social Condition of Marocco.

It is impossible, says Hooker, to speak too highly of the natural resources of Marocco. It enjoys all the advantages of a mild climate, abundant water, fertile

soil, varied products, and happy commercial position between two seas at the angle of a continent. Although under the same latitude as Algeria, it far exceeds that region in its general physical prerogatives. With the exception of a few tropical species, Morocco might cultivate all plants useful to man, while its mountains are as rich as those of Spain in mineral deposits. Yet how little does this favoured land count in the general balance of nations! But in few other countries are the inhabitants more enslaved by a Government with boundless arbitrary power. Fortunately most of the inland Berber tribes have been able to maintain their independence, while in the seaports the Sultan's officials are held in check by the European consuls. Thus is explained the fact that the Government, although at times aided by drought, locusts, and cholera, has hitherto failed to transform the country to a desert.

Nevertheless it would be unfair to repeat with many writers that this "African China" is barred from all progress. The reports of travellers show that during the last half-century great changes have taken place. Europeans traverse without risk the whole of the settled parts; they easily find teachers of Arabic, and the former fanatical hatred of strangers has in many districts given place to more friendly sentiments. If it is still dangerous to travel among the Berber tribes, this is due not to their jealousy of the foreigner, but to their mistrust of all visitors, regarded by them as spies.

Morocco is being gradually brought within the sphere of European influences. Every seaport has its little colony of traders, and in Fez there are no less than five hundred Spaniards, for the most part, however, renegades or deserters. Politically protected by the mutual rivalry of the Western Powers, Morocco is being gradually conquered by international trade. There is not a Berber village in the Atlas or the southern regions bordering on the Sahara in which the tea introduced by the English from China has not found a market.

### Agriculture—Industries—Trade.

Agriculture, oldest of industries and the slowest to change, has been but little modified in its traditional methods. The exportation of wheat and barley being forbidden, the cultivation of these cereals so well suited especially to the province of Gharb, makes little progress, while the area under maize, pulse, and other grains whose export is permitted, continually increases. But no vegetable species has recently been acclimatised; nor has any effort been made to introduce European animals, or improve the native breeds by crossings. The export of horned cattle is limited to a few thousands to each of the West European states, while that of sheep and horses is still rigorously interdicted.

The native industries, specially protected by the Government, have been better preserved than in any other Mohammedan country. The carpets, textiles, Morocco ware, arms, glazed faïence, are still produced according to the traditional processes, and some of these products, such as the white haïks with silken warp and fine woollen weft, are extremely beautiful. But the heavy duty of 10 per cent. is not

GENERAL VIEW OF FEZ.

sufficient to exclude foreign goods from the Morocco markets. The lines of steamers plying on the seaboard, the caravans obtaining their supplies in the interior, all tend to further the industrial revolution in progress throughout the empire. Far more rapid must be the changes as soon as the country is opened up by a regular system of communications. At present the ambassadors proceeding from Tangier to Fes usually take twelve to fourteen days to accomplish this short journey of 120 miles; and although the projected railway from Fes to Lalla Maghnia has been arrested by diplomatic difficulties, the barrier of seclusion along the Algerian frontier must soon yield to outward pressure.

The two nations that have developed the most extensive commercial relations

Fig. 187.—A Souk at Fes.

with Morocco are England and France, the former absorbing about half of the whole foreign trade of the country. But to the share of France should also be added the brisk contraband traffic that has sprung up between Tlemcen and the borderlands. In virtue of the Madrid Convention, signed in 1880, the right of all foreigners to hold property is fully recognised. But the purchase of land can only be made with the preliminary consent of the Government, a consent which is never granted.

Except in the towns where foreigners are settled, the changes effected in the habits and ideas of the people are not sufficiently pronounced to reveal themselves in the local institutions. The schools of the interior still continue to teach little

beyond the chanting of verses from the Koran, although the standard of public instruction is gradually rising, thanks to the increasing relations with strangers, temporary emigration, the pilgrimage to Mecca, and the example set by the Jewish schools established in some of the large towns since 1862. In 1884 these were attended altogether by eleven hundred and fifty students, receiving their education in French, which has become the cultured language of Jewish and European society. No papers however are yet published anywhere, nor are works any longer composed in Arabic.

Fig. 188.—Frontiers of Algeria and Morocco.

Scale 1 : 960,000.

Polygamy is as rare as in Algeria, except amongst the grandees, who are obliged by their position to keep a large harem. The Emperor has hundreds of wives, and every Friday a new bride is said to enter his household. The old forms of slavery still exist; and although the traffic in white captives was formally abolished in 1777, the stream of Negro slaves still continues to flow from the Sudan across the Sahara to the very gates of the European consulates in Tangier. Their public sale is officially interdicted, but of late years the trade has more than doubled, and the mutilation of children is still practised by all the dignitaries of the empire.

### Government—Administration.

The sovereign, a member of the Tafilelt Shorfa family, whence the title of "his Sherif Majesty," is absolute master, as far as permitted by the Koranic law. Even of this law he is the interpreter, being at once temporal ruler and spiritual guide of his subjects. His imperial will is thus the only law. He may condescend to take counsel and act through agents; but he has no ministers, in the strict sense of the word. Nevertheless he need but turn his gaze towards Tangier to

understand how greatly his power is henceforth limited by the mere presence of the

Fig. 189.—Fes—Gateway of the Kasbah.

foreign consuls. The Portuguese order of "the Tower and Sword" still reminds

the natives that the conquest of Fez and its towers continues to be the goal of their northern neighbours. The empire is even already invaded by Spain, which possesses strongholds on the seaboard and has secured a firm footing at the Mediterranean entrance of the Strait. On the Algerian side the frontier is well defined, at least along its northern section, nor does France hold any *enclave* within the Moroccan borders. But this conventional line, coinciding with no natural, strategic, or ethnical limits, has already been repeatedly violated by French detachments in pursuit of hostile tribes, such as the Amurs, Beni-Iznatens, or Sidi-Sheikhs. England also has in her turn played the part of a protecting power, often subsidising the imperial Government, and in 1860 even preventing the victorious Spanish army from advancing against Tangier. The very treaties of commerce have been dictated, so to say, clause by clause, and the Cape Spartel lighthouse, at the threshold of the empire, has been built by the foreigner and is maintained by the European consuls. The Sultan is well aware that he has no longer the strength to withstand the will of Europe, and that the best security for the permanence of his rule lies in the mutual rivalries of the Great Powers.

The consular jurisdiction is at times extended to the Mohammedans themselves. Natives in litigation with a European must plead before the protecting consul, and abide by his decision. On the other hand, foreigners under like circumstances appeal to the cadi; but if dissatisfied with his judgment, they may bring their suit before the emperor, that is, indirectly before their respective ambassadors.

But the local administration of justice is a much more summary affair. The sentences, or rather judicial acts of vengeance, are incredibly barbarous and cruel. If the penalty of death is rarely inflicted, the victims only suffer all the more, being reserved for a slow physical agony. In the State prisons they are often confined with the neck passed through an iron collar obliging them to maintain a standing position day and night. Many of these prisons are foul dens where they are forgotten and left to perish of hunger. Thieves have sometimes their hands closed for ever, the nails penetrating the live flesh through slits made with a knife, and a fresh skin gradually spreading until the hand grows to a stump. More ordinary punishments are the bastinado and fines, always imposed by the cadi, from whom there is no appeal. The supreme judge of the empire is the Cadi of Fez, generally a member of the imperial family appointed by the Sultan. He selects the district cadis, who in their turn nominate those of the various tribes or communes, without reference to their superiors.

### Army.

The army is recruited somewhat at haphazard. In principle, each tribe forming the makhsen or military section of the population is bound to supply one man for every hearth. But in practice the kaids called on to furnish troops seize all within their reach, sending them in chains to the ranks, where they remain for life unless redeemed by a substitute. The forces thus raised form a total of 25,000 men, of whom 7,000 are infantry; but in time of war the Sultan could raise probably 40,000 infantry and an equal number of horse. The so-called *guich*, or

nucleus of the army, comprises a body of about 9,000, at once gendarmes, soldiers, and Government officials. The most formidable of these are the Abid Sidi-Bokhari, "Slaves of the Bokhara Lord," so-called because at the time of their formation in 1679, they were placed under the invocation of a Bokhariot "saint." This corps, exclusively Negroes, constituted till recently a sort of Prætorian Guard, a menace to the sultans themselves; and, although now dispersed throughout the provinces, they still hold nearly all the high military posts. They are largely employed as tax-gatherers, hence are everywhere the terror of the natives. The guides, when asked by travellers in abandoned districts the cause of the desolation, reply laconically, "The locusts or the makhseni." Badly clothed, badly equipped, badly commanded, and without discipline, the native troops are, nevertheless, excellent soldiers, brave under fire, sober, patient, industrious and intelligent. A battalion drilled at Gibraltar at the cost of the British Government, is reserved to parade on State occasions, and impress the foreign envoys with a feeling of respect for the native army.

## Finance—Administrative Divisions.

Morocco is one of the few countries which have no public debt, or which have at least a revenue amply sufficient for all requirements. But strictly speaking there is no budget, what is known by this name being simply the emperor's private purse. His income is derived not only from his domains and the "presents" of all sorts offered to their sovereign or protector by the towns, tribes, and communes, but also from the regular taxes levied on the land and live stock, the judicial fines, the custom-house duties, the profits of the tobacco and other monopolies. The expenditure, almost wholly absorbed by the army and the court, scarcely amounts to half the receipts, so that a large annual sum remains to the credit of the treasury.

After the Spanish war, Morocco undertook to pay an indemnity of £4,000,000 for the ransom of Tetuan. To meet this charge, half of the customs, averaging about £280,000, were assigned to Spain, whose agents are armed with the right of inspecting the imperial custom-houses. A fourth of the same dues is secured to the English bankers, who served to negotiate the treaty of peace with Spain; lastly the remaining fourth goes absolutely to the Sultan.

The only national coin minted in Morocco is a small copper piece valued at about a third of a farthing. But the ordinary medium of exchange is the douro, that is, the five-franc piece.

For administrative purposes the empire is divided into *amalats*, or districts governed by *amils*, or *kaids*. The vassal tribes also receive a representative of the Sultan, either as master or envoy, according to the degree of submission to which they are reduced. In 1880, at the time of Leared's visit, Morocco was divided into sixty-four amalats, of which thirty-three were in Fes and Marrakesh, and nine in the Wed Sûs and Tafilelt regions. According to Erckmann, the more or less independent tribes are administered by three hundred and thirty kaids.

# CHAPTER XI.

## THE SAHARA.

THE term Sahara (Sah'rā) meaning a vast plain, waste, or wilderness, appears to have no very precise value. It is a geographical expression applied by various writers to an aggregate of regions to which very different superficial areas are assigned. In its general acceptation it comprises the almost waterless and very sparsely inhabited zone which separates the Barka plateaux and the Mauritanian uplands from the countries watered by the Senegal, the Niger, the affluents of Lake Tsad, and the headstreams of the White Nile. But where are we to draw the line of separation between the "Greater Africa" and the region which has been called the "Lesser Africa"? According to some writers, its northern limit skirting the foot of the Atlas merges eastwards in the shores of the Syrtes, thus embracing the whole of Tripolitana and coinciding at one point with the Mediterranean seaboard. But account is more usually taken of the political frontiers traced to the south of the Barbary States, and many tracts which in their physical aspect and climate present features common to both zones, are thus excluded from the Sahara and comprised in the Mediterranean basin.

### Extent—Population.

The natural limits of the Sahara are indicated both by the nature of the soil and the shifting phenomena of its climate. Wherever regular rains cease to fall, the desert begins. But no fixed barriers can be assigned to the movement of the moisture-bearing clouds. In their relation to the arid zone they advance to a greater or less distance, gaining or losing ground according to the cycles of years or centuries. Where no precise boundaries are laid down by mountain-ranges such as the Atlas, or by river valleys such as the Nile, the transition from the Sahara to the surrounding regions is effected through intervening zones of varying breadth. Nor have all the frontier lands yet been accurately explored, so that its outlines can only be approximately indicated on the maps.

In its widest extent the Sahara covers an area almost as large as Europe itself. From east to west, that is, from the banks of the Nile to the Atlantic seaboard, it stretches for a distance of 3,000 miles, with a mean breadth of perhaps 900 or

1,000 miles north and south, from the foot of the Atlas to the Sudan. Yet, comparatively short as is the journey in this direction, how laborious and full of dangers for caravans slowly advancing under a fierce sun, in the midst of blinding sands, beguiled by the glittering mirage, tormented by the fear of finding dried-up springs at the next watering station! Excluding the oases of Barka and Kufra, Tripolitana and Fezzan, the smaller "Saharas" of Tunisia, Algeria, and Morocco, together with the grassy zone skirting the fertile regions of the Sudan, the superficial area of the Great Desert may be roughly estimated at 2,480,000 square miles. The whole population of the various oases, isolated uplands and humid depressions scattered over this vast extent is supposed not to exceed five hundred thousand souls.

## Progress of Discovery.

As in the days of Herodotus and Strabo, the journey across the Sahara is always a laborious undertaking, probably even more so now than at that epoch, the ground having become more arid, rivers having dried-up, and forests disappeared during the last two thousand years. The descriptions of the old writers are doubtless exaggerated, as they needs must be at a time when explorers were unaided by scientific instruments, and when their reports, passing from mouth to mouth, at last merged in fable. Libya, south of the Mediterranean, was regarded as a land of fire, uninhabitable by men, beasts, or plants, where the very soil was calcined. Nevertheless, journeys of exploration and military expeditions made it evident that these "torrid" regions were not inaccessible. Herodotus relates the adventures of the five young Nasamons who had ventured into the desert in the direction of the sephyr, and who after many days' journey reached a city in the country of the Blacks, situated on a great river. But whether this was the Niger at its great bend in the Timbuktu district, or Lake Tsad, near the mouth of the Komadugu, or some other affluent, cannot now be determined. In any case, these Libyan pioneers had crossed the Sahara, judging at least by the direction followed by them, and the detailed account they give of the river peopled with crocodiles and flowing from west to east.

Without getting so far, the Roman captains had also penetrated far to the south, for Cydamus and Garama still preserve the remains of their monuments, and Suetonius Paulinus had surveyed the valley of the Wed Guir, probably a tributary of the stream reached by the Nasamons. But how many other armies, how many caravans, were long ago lost in the wilderness, consumed by the burning sun, like the running waters gradually absorbed in their sandy beds!

Since the close of the last century, when the Society for the Exploration of Africa was founded in England, the routes of European travellers across the Sahara have been carefully traced on the map. Even those of Jewish and Arab traders have been followed and attached to the network of scientific exploration. The Sahara has already been traversed at several points from north to south; but no traveller has yet made the complete journey in the direction of its length from the banks of the Nile to the shores of the Atlantic. The reader will remember the

expedition of Rohlfs and his associates, who after vainly attempting to perform the first stage of this route from the Dakhal to the Kufra oasis, were compelled to stop short and turn northwards between the parallel lines of dunes leading to the Siwah oasis. Even the coast of the Sahara between Capes Bojador and Blanco is one of the least known on the African seaboard, although now annexed to the possessions of a European power.

The few meshes of the network traversed by explorers occupy altogether an extend of little over 200,000 square miles. Consequently when we speak of the Sahara, we cannot exclaim with Columbus, "How small is the earth!" While elsewhere the world grows less, subdued by steam; while highways are everywhere being constructed and the transport service accelerated, the Sahara remains as difficult of access, as formidable as ever. If the ocean links opposing continents, the desert almost completely separates the neighbouring lands. North and south of the intervening sands, the animal and vegetable kingdoms differ specifically, and the races of mankind present the sharpest contrasts in their origin, appearance and usages. On the Mediterranean seaboard, as in Europe, the populations have been frequently renewed by great waves of migration: Vandals have come from the west after making the circuit of a continent; Arabs have penetrated from the east after skirting the shores of the Inland Sea; but across the Sahara from north to south there have been no great movements of population, nor even any conquests by a single military expedition. Here the modifications of type, institutions, and customs have been effected by a slower process of penetration between the northern and southern borderlands. The slaves imported from Sudán have modified the Berber type in Mauritania, giving rise to the Haratins of the Morocco oases, the Atryas of Twat and Ghadames, the Ruaghas of Algeria. The Arab traders and missionaries have in their turn changed the religion and government of the Sudanese populations.

## Physical Aspect.

The Sahara is not a dried-up marine basin, as was supposed by geologists before the nature of its soil and the inequalities of its relief were as well understood as they now are. Even the low-lying tracts stretching south of the French possessions, where some of the depressions are actually below the Mediterranean level, have certainly been dry land throughout the Quaternary epoch. Beyond this Berber section of the desert no remains of marine origin have anywhere been found. The chalk and sandstone formations, the granites, gneiss, porphyries, and basalts cropping out on its rugged surface show no traces except of weathering by the action of sun, wind, and rains.

Throughout its whole extent the Sahara is a continental region, presenting certain marked contrasts in its physical aspect, and containing considerable tracts to which the term desert can scarcely be properly applied. Like other parts of Africa, the Sahara has its highlands, its valleys, and running waters, although mainly consisting of vast uniform plateaux, stony wastes, and long ranges of dunes rolling away beyond the horizon, like the billows of a shoreless sea. Here is the

true wilderness, a region destitute of flowering plants or shrubs, without birds or butterflies, exposed only to the blind forces of heat and the winds. According to a summary estimate, the horizontal and ravined plateaux occupy about half of its whole extent; a ninth is covered with sands, while the rest is shared by the rocky highlands, steppes, eroded depressions, oases, and strips of cultivated borderlands. Zittel estimates its mean elevation above the sea at 1,100 feet.

Notwithstanding the differences of relief, a character of unity is imparted to the Sahara throughout its whole extent, chiefly by the scarcity or complete absence of water everywhere except in the hilly districts, where the higher summits penetrate to the upper atmospheric currents. For the origin of the Sahara has to be sought, not in the ground itself, but in the aerial regions above. Its creation must evidently be traced to the same causes that have given rise to analogous desert wastes in the Asiatic continent. It is, in fact, merely a western prolongation of the almost treeless tracts which traverse Mongolia, Kashgaria, Turkestan, Irania, and Arabia, interrupted at long intervals by watercourses fringed with trees, or by mountain ranges and verdant upland valleys.

To the prevailing dry winds is due this long desert zone with its parallel strips of bordering steppelands, obliquely crossing the eastern hemisphere for a space of some 7,000 or 8,000 miles. To these Asiatic and African wastes Humboldt has given the collective name of "track of the polar winds," as if the aerial currents which in the tropics become the trade-winds regularly followed the line traced in white sands across the two continents. This view, however, is not quite correct. The general atmospheric movement from the North Pole towards the equatorial regions does not follow such an oblique direction as is here indicated. Although deflected towards the south-west by the rotation of the globe, it is far from being always regularly directed east and west along the axis of the Sahara, parallel with the equator. The meteorological observations made in the Sahara itself and on its borders show that the normal direction is from the Mediterranean southwards. Except in the eastern parts, and in the Tuareg territory, where, however, they are very variable, the prevailing winds are not those which come from the east or north-east after losing nearly all their moisture on the long journey across the Asiatic continent. Nevertheless the direction of the prevailing currents in the Sahara sufficiently explains its arid character. In Asia the polar winds, whose moisture has been precipitated on the Altai, Tian-Shan, Turkestan, and Anatolian highlands, bring little or no rain to east China, Iranis, and Arabia. For the same reason the dry winds from Europe are unable, during the short passage across the Mediterranean, to take up a sufficient quantity of vapour to supply the African continent. Their slight store is exhausted on the northern uplands, leaving little for the southern regions of the Sahara, where scarcely any rain falls except in the month of August, when the sun is at its zenith.

The general aspect of the desert bears evidence of great changes, which can be due only to the action of water. Large wadies with their banks and flats preserve the record of running streams in these now arid regions. Deep gorges excavated in the rocky plateaux also speak of the erosions caused by torrents and streams,

which have carried away the soil, distributing it in thick alluvial deposits over the plains. Then flourished the forests whose petrified stems are still visible in many parts of the desert; then lived the elephant and rhinoceros figured on the sculptured rocks in the Fezzan, Algerian, and Morocco highlands; then the caravan routes were slowly traversed by pack oxen, since replaced by the camel. The rivers frequented by the crocodile are now dry, and all the large fauna have disappeared with the forests which afforded them a refuge.

Nothing remains except a few flowing springs, and to obtain water, wells must be sunk in likely spots well known to the skilled eye of the nomad. But even this water is mostly brackish and disagreeable to the unaccustomed palate of the traveller. On arriving at the Dibbela wells, the first on the route from Lake Tsad to Fezzan, the people coming from the south, where good waters abound, always fall ill. But arriving from the north, after they have gradually become habituated to the taste of the desert waters, those of Dibbela seem well flavoured. The same phenomena of desiccation observed in the steppes and deserts of Central Asia and South Russia, have taken place in the regions south of the Atlas, only here the zone of regular rains appears, perhaps by a process of compensation, to have been enlarged at least in the southern districts of the Sahara.

### The Dunes.

But however this be, the changes now going on are due almost exclusively to the action of sun and winds, and to the alternating temperatures. The great geological transformation of solid rock to shifting dunes is entirely the result of meteoric agencies. As soon as the softer rocks present an aperture through which the outer air can penetrate, the work of disintegration has begun. Dolomites, gypsums, and sandstones begin to crumble, and are slowly changed to sand or dust, the surface of the rock gradually corroded, leaving here and there the harder core, which thus develops into pyramids or pillars standing out in the midst of the sands. The argillaceous strata are attacked in the same way, everywhere crumbling away except where preserved by the binding action of the roots of tamarisks and other shrubs.

Once disintegrated, all this débris, whether of gypsum, limestone, silicious, or clay origin, immediately begins to move. Wafted far and wide by the winds, it contributes to form in the depressions those argillaceous deposits which resemble the "yellow earth" of China, but which, for lack of the vivifying waters, are unable to yield the rich crops of that region. The particles of quartz, varying in size, are also borne from station to station, and deposited in the form of dunes, which are incessantly modified and displaced by the diverse action of the aërial currents. Thus the dunes are obviously of recent or contemporary formation, due to the peculiar influences of the Saharian climatic conditions.

The hypothesis has been advanced that, after being formed by the disintegration of the rocks, the dunes remain on the spot. They certainly do not travel as rapidly as might be supposed by those who have seen how they are at times blown

about by the storm, filling the atmosphere with dense clouds that darken the sun. In the presence of these sandstorms, almost as dangerous as those of snow, the traveller recalls the legends of caravans and whole armies swallowed up by the advancing billows of sand. But after the storm has passed the general aspect of the landscape is found to have undergone little change. The hillocks are still in their places, and seem to have been scarcely modified in their main outlines. But a single day counts for little in the history of the erg, and even during the contemporary period examples are not wanting to show that if most of the sandhills remain or reform in the same place, others occasionally get shifted. The guides often point to hillocks occupying the site of some former depression along the caravan route. That such displacements must take place is evident, unless we suppose a perfect equilibrium of the atmospheric currents. But such an equilibrium does not exist, because the winds blowing from the Mediterranean are known to predominate in the Sahara. In many districts the exposed spaces reveal a rocky ground, evidently of different geological origin from that of the surface sands. Thus the chalk plateau south of the Mzab territory is covered here and there with dunes brought from the great western reservoir of sands. East of El-Golea M. Rolland recognised two such shifting ridges about 30 miles long, with a mean breadth of over 2 miles.

But such formations cannot be developed in all places, the direction of the sands being necessarily influenced by the relief of the plateaux, the valleys and depressions, the aërial currents. Shifting from dune to dune under the action of the wind, the fine particles of dust are at times swept into heaps, like the drift snow in sheltered spots. But elsewhere sandhills are met which have been permanently fixed or bound together by the roots of trailing plants, and near the oases it might be possible to arrest the progress of the dunes by planting drin and other species which flourish in such a soil.

## The Ergs—Iguidi.

The principal sandy regions are the great Libyan desert, between the Egyptian oases and the Tibesti highlands, the two Ergs, or "veins" of the Berber Sahara, the Edeyens of the Tuareg territory, the Iguidi, west of the Wed Saura, the Maghtir and Adafer dunes, and others surrounding the Juf, north-west of Timbuktu. Of all these sandy regions, the best known is the eastern Erg, comprised between the Wed Igharghar basin and the Red Hamáda, which has been several times traversed by European travellers proceeding to Ghadames. Here the slow progress of the dunes lies in the direction from north-west to south-east, as shown by the present position of the great ridges relatively to the original centres of disintegration.

In the western Erg the movement is eastwards to the chalk plateaux; in the Wed Righ and in Wargla, northwards to the oases; in Iguidi, mainly from the north-west to the south-east, under the influence of the oceanic monsoons. According to M. Duveyrier, the normal direction for the whole of the Sahara

would appear to be from the north-east to the south-west, in accordance with the general course of the trade winds.

In the eastern Erg some of the crests are much higher than those of the French dunes on the Gascony coast. The Ghurd El-Khadem, measured by MM. Largeau, Say, and Lemay, has a height of 450 feet, and others are said to reach 490 feet, within 40 of that measured by Vogel near the "Lake of Worms," in

Fig. 190.—The Great East Erg.

Scale 1 : 120,000.

Fezzan. Duveyrier saw sandhills in the eastern Erg over 660 feet high, and Largeau speaks of one attaining a vertical elevation of 1,650 feet. But their extreme altitude cannot be determined until the Sahara has been more completely surveyed. Seen from the neighbouring hills, those of the Erg present the appearance of enormous ocean waves suddenly solidified.

Besides the troughs between the sandhills, in several places deep depressions have been developed, resembling the craters of volcanic cones. Such is the Ain-

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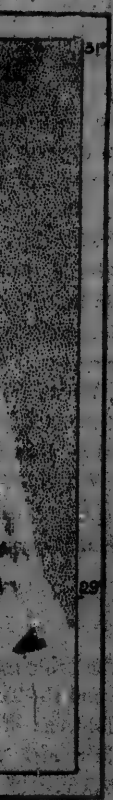


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THE SAHARA—VIEW TAKEN FROM THE SPA PASS, NORTH-WEST OF BISKRA.

Tsibe cavity, about 60 feet deep, with a circuit of from 500 to 600 feet, which is flooded and fringed with sedge. In the vicinity is a similar formation partly choked with sand. In several places stony concretions are found, attesting the former presence of mineral springs which have long disappeared. But among the stones scattered over certain regions of the Sahara there are many the origin of which has not yet been explained. Such are the crystals in the form of pyramids, stars, or crosses, the chaplets, "fish scales," and blackish nodules varying in size from a cherry to a hen's egg, hollow inside or filled with sand. Such also are those vitrified silicious tubes usually about 12 inches long and terminating in a sort of hard core. They occur in such large numbers in the southern parts of the Air district that they cannot be regarded as of meteoric origin. The Sahara is altogether a vast field in which geologists have still many things to discover.

In the Iguidi and certain parts of the Erg districts the phenomenon of the "singing sands" is not unfrequently heard, as on the slopes of the Serbal in the Sinai highlands, and elsewhere in the Asiatic deserts. The deepest silence is often suddenly broken by a vibrating sound like that of a distant trumpet, lasting a few seconds, then dying away, and again breaking out in another direction. This is no hallucination, for it is heard by animals as well as men, many of whom, ignorant of the cause, are stricken with fear by this mysterious "music of the sands." The effect is evidently due to the crumbling or friction of myriads of molecules from time to time yielding to upward pressure. But it still remains to be explained why the phenomenon is not heard in all parts of the sandy regions, but restricted to certain districts. This, again, may perhaps be due to the different constitution or crystallographic nature of the vibrating particles.

## Climate of the Sahara.

These vast sandy tracts are the best evidence of the extreme dryness of the climate. As observed by Carl Ritter, "The Sahara is the south of the world," although situated entirely north of the equator, and although Mascat, Aden, Tajura, and some other spots on the surface of the globe have a higher average temperature. A characteristic feature of its climate is the enormous oscillation between the extremes of heat and cold. While the sands are heated to a temperature of 170° F., and even 190° F. in the sun, or from 136° F. to 146° F. in the shade, the radiation at night lowers the glass to 26° or 28°, that is, from four to six degrees below freezing-point. Such is the intense dryness of the atmosphere that fogs are almost unknown, although a slight dew gathers occasionally on the plants about sunrise, either after rainy days or during any abrupt lowering of the temperature. In this atmosphere destitute of humidity, arms never rust and flesh never becomes putrescent. Heavy showers are extremely rare, and in the Tuareg country ten or twelve years pass before the watercourses are flushed and vegetation renewed by a tropical downpour.

Limited north and south by two zones of regular rainfall, the Sahara presents no fixed laws for the recurrence of its meteorological phenomena. It forms a sort

of neutral zone, in which the normal succession of the aërial currents is suspended. One of the most dreaded winds is the sirocco, which blows from the south, often accompanied by whirlwinds of sand. These dense volumes of reddish dust sweep over the desert like sheets of flame and with the velocity of tornadoes, now rising into the upper regions, now grazing the surface of the ground.

## The Caravan Routes.

The moving sands, the long stony hamâdas, the torrid heats followed by sudden returns of cold, the pestiferous winds, the dust-storms, the "cloudless skies and shadeless earth," the vast distances, the long intervals between the wells—at times dried up, at times held by hostile tribes—all tend to enhance the perils of the route, and to explain the solemn earnestness with which caravans equip themselves for the journey across the wilderness. The profession of guide, hereditary in certain families, constitutes a sort of priesthood, for this person holds in his hands not only his own life, but that of all committing themselves to his guidance. At the departure of the caravan he meets with homage, mingled with entreaties; on its safe arrival he is overwhelmed with thanks. In the most monotonous regions he is familiar with the slightest landmarks indicating the route to follow. The smallest plant, traces on the sands invisible to others, the atmospheric currents, all help to direct him along the right track or warn him of impending danger. He consults the fleecy cloudlet, and in the neighbourhood of the oases follows with the eye the long flight of the swallow and other birds of passage. Even unaided by sun and stars, he knows the right direction, and unerringly points to the precise quarter of the horizon leading to the wayside stations, and to the habitations of man on the verge of the desert. When he belongs to a race with complexion grey as the sands, or red as the soil of the hamâda, he lays his garments aside and rolls naked on the ground, the better in this disguise to reconnoitre passing strangers and ascertain whether they be friend or foe. He knows the exact position of every oasis, of every pool or puddle, of every spring or well; the path along the trackless desert is traced in his memory from station to station, and when compelled to follow a new route experience must aid him in determining the right course.

It happens at times that well-known highways become lost, either by the invading sands filling up the wells, or by hostile hordes seizing the stations along the route. Then the memory of the abandoned tract gradually fades into vague tradition, and in the popular imagination it becomes an earthly Eden. Thus was pictured the "Little Wan," before this long-lost oasis was rediscovered by the Arab explorer, Mahommed Tarhoni of Zella. The natives of Tibesti have lost the route followed by their forefathers across the Libyan desert to Egypt, and still speak of some delightful intervening oasis, where the sparkling waters murmur beneath the shade of the palm groves.

On the other hand, the caravans of Wadai struck out fresh trade routes towards Tripolitana in the years 1811 and 1813, although these highways have remained neglected for many decades. But even were the journey across the Sahara every

where less laborious, the desert routes must become every year less frequented, since the trade of Europe has begun to penetrate into the interior of the continent by the great arteries of the Senegal and Niger. By these changes the desert must, so to say, remain outflanked until the Twat oasis becomes attached to the projected railway system between the French possessions on the Mediterranean and Atlantic seaboards. At present the total yearly traffic across the Sahara can scarcely exceed £80,000.

However shrewd and careful the guides, however patient and enduring the camels, disasters are still unfortunately far from rare. Whoever strays from the path is lost. A prey to hunger and the still more terrible thirst, he is presently seized by some master-thought overriding all reflection; in his hallucination he fancies himself at the bottom of some dark pit, or ceaselessly climbing some steep hillside. When at last he lies down, his eyes are closed in death, and his body, around which rises a little dune, becomes rapidly dried up. To ensure their mutual safety, the members of the caravan must keep close together, or at least within sight and hearing of each other. Any lagging behind may prove instantly fatal, as was shown in such a terrible way during the second expedition sent by the French to Wargla for the purpose of surveying the route of the future trans-Saharian trunk line. According to the customs and institutions of the various tribes inhabiting the oases and confines of the desert, this necessary sense of solidarity in the caravan is differently understood. In many Berber clans, accustomed to self-government and recognising no master, the group of travellers constitutes a common jemâa or assembly, in which each gives his advice and fulfils his special function for the common good. But the Arab convoy is ruled despotically. Here the khebir is master, and all must obey. Under his orders are the *shouâ* who interpret his will, the *chouf* who watch the land, a *khejia* who "keeps the log," a crier who announces all decrees, a muezzin who calls to prayer, and a priest who "reads the service."

## Natural Divisions—Ennedi—Wajanga.

The natural divisions of the Great Desert are indicated by such mountain ranges or uplands as Tibesti, Tassili, and the Jebel Ahaggar. Were there a sufficiently heavy rainfall, these highlands would constitute water-partings for so many distinct fluvial basins draining to the Nile, to the Syrtes, to the Atlantic or the Niger.

The eastern basin, specially designated by the name of the Libyan desert, has probably no uplands except some isolated sandstone rocks and sandhills, such as those lying along the route of travellers between the great bend of the Nile and Kordofan. No mountains have anywhere been detected on the distant western horizon, nor have any watercourses been found indicating the presence of high ranges likely to attract rain-bearing clouds. Judging from the natural incline of the borderlands round the margin of this vast basin left still a blank on our maps, it would appear to slope gently northwards in the direction of the Egyptian oases.

But the Dar-For highlands, many of whose crests exceed 3,500 feet, are con-

tinued towards the north-west by a low ridge separating the Nile basin from the waters flowing in the direction of Lake Tsad. Here begins the line of hills and plateaux which crosses the desert obliquely for a distance of about 1,200 miles, as far as the Twat oases and the Wed Saura.

A first group of rocks and hills constitutes the land of Ennedi, known also by other names to the Arab and native travellers. Its valleys, which give rise to a few wadies, are inhabited by members of the formerly powerful Zoghawa nation, who also roam the steppes of North Dar-For, and who in the twelfth century ruled over the whole region comprised between the Nile Valley and the highway from Fezzan to Bornu. A few thousands of the Dar-For Beale or Bideyat people also occupy several of the Ennedi valleys, where some Tibbu tribes from the north-west are tolerated by the rulers of the land. But no European traveller has yet penetrated to Ennedi, which is known only from the reports of native traders.

North-westwards the line of uplands is prolonged in the direction of the axis of the Sahara, enclosing the Wajanga (Wanjanga, Wanja, Onja) oasis, which has also not yet been visited by any European explorer. It is known from the accounts of traders that the surrounding hills are quarried for the rock-salt contained in them. From the Wajanga oasis the tableland slopes gently northwards in the direction of the palm groves of Kufra.

## Tibesti—Bornu.

The range of mountains known to the natives by the name of Tu, that is, the "Rocks," and usually called Tibesti by the Arab travellers, to the inhabitants of the southern plains of Bornu presents the appearance of a regular rocky cliff bounding the northern horizon. This range, which is about 300 miles long, or 420 including its less elevated offshoots, was known only by name till the year 1869, when Nachtigal undertook a dangerous journey to its northern district. The attempt which he subsequently made to approach it from another direction, and there more accurately determine its physical constitution, proved unsuccessful. He however came within sight of the mountains, and was at least able from a distance to survey some of their chief crests.

In southern Tibesti the principal mountain group is Kussi, which, according to Nachtigal, probably exceeds 8,200 feet in absolute elevation. He was informed by the natives that here the water freezes almost every year, and that the load beasts of camels are covered with a thick coat, like those of the Mediterranean sheep. The dominating summit is a cone of volcanic appearance, and, following the descriptions of his informers, Nachtigal speaks of a "natron grotto," which also contains large deposits of sulphur. Two thermal springs also flow at the foot of the mountain.

The Tarso, a northern group of hills traversed by Nachtigal, certainly contains a large number of volcanoes. In this district Tibesti rises above the surrounding plains in the form of a broad tableland about 2,300 feet high, and of very easy access, above which are scattered numerous cones, or hills, some isolated, others dispersed in

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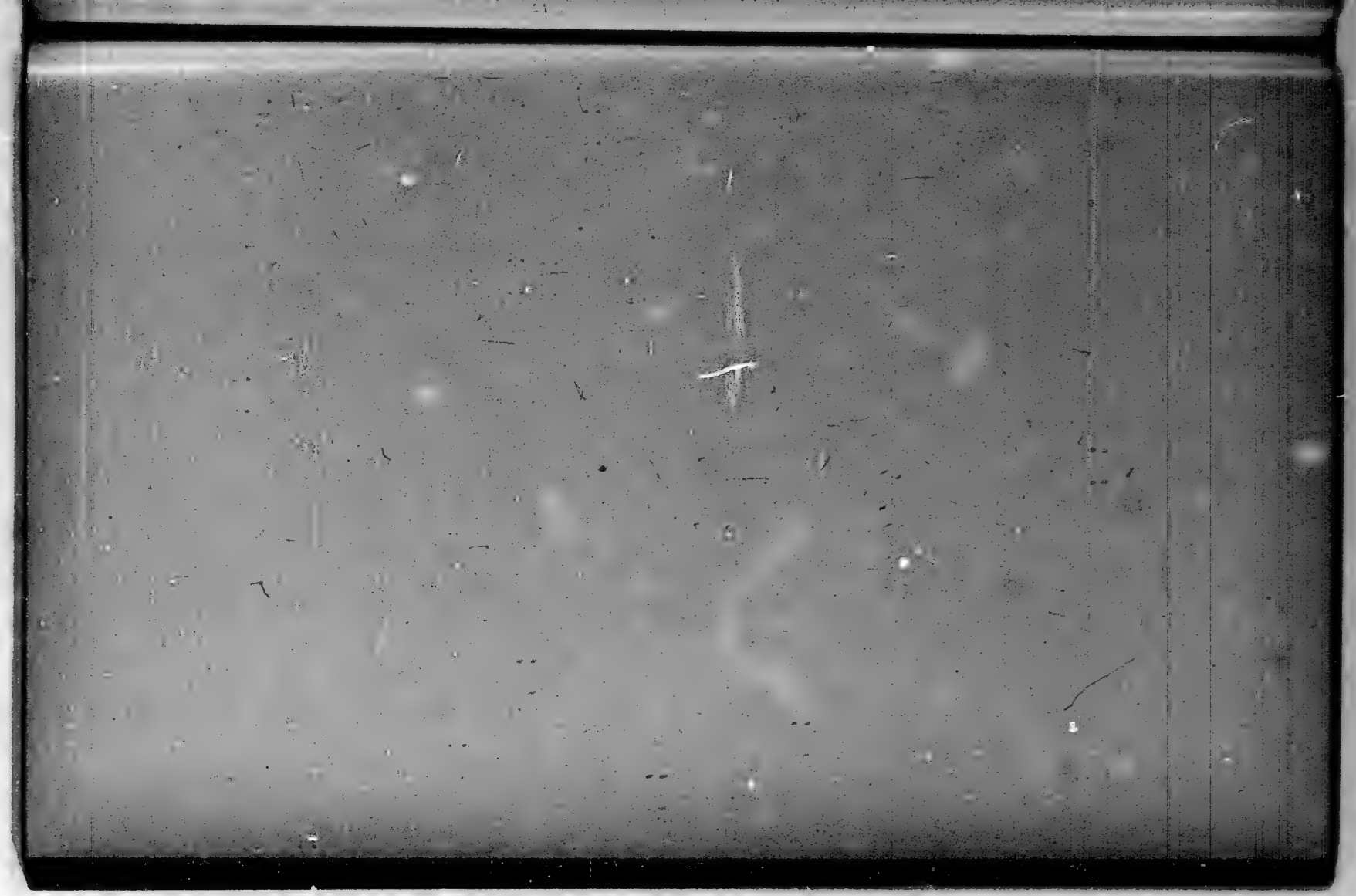
## EASTERN SAHARA.

NEW YORK: D. APPLETON & CO.

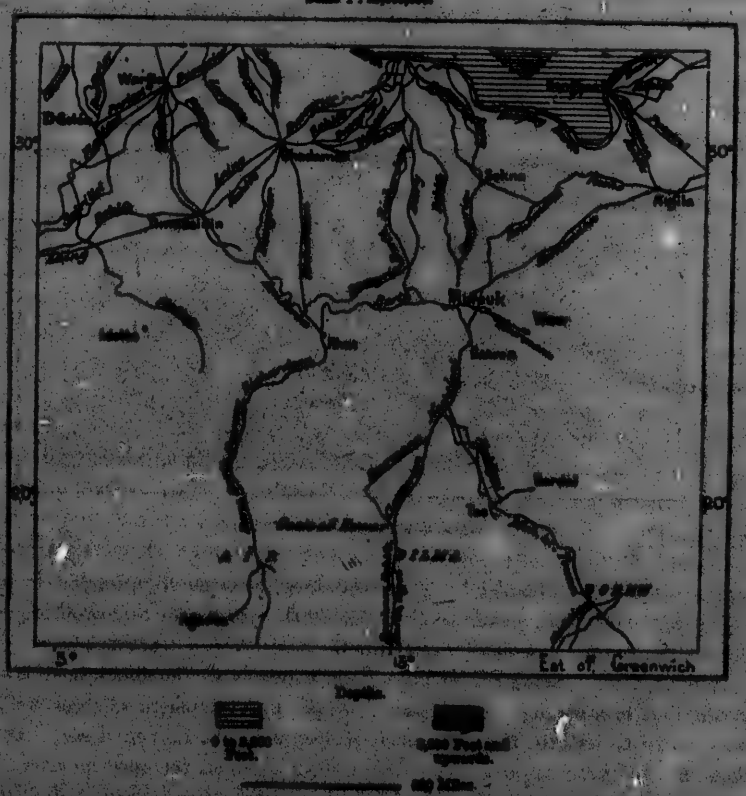


ranges. All are eruptive cones, which have risen above the crevasses of the plateau while covering the original sedimentary rocks with lavas and ashes. Over the slopes is strewn a fine layer of grit, as pleasant to walk on as the sandy paths of a garden.

Mount Tussideh, the culminating cone in this district, rising to an elevation of over 8,800 feet, shows on one of its slopes a secondary cone which formerly emitted

Fig. 191.—Routes of the Chief Explorers in the Eastern Sahara.

Scale 1 : 20,000,000.




smoke. Near the southern talus, about 1,000 feet below the summit, lies the mouth of a crater, which according to Nachtigal has a circumference of "three or four hours," with a depth of over 160 feet. From the level surface of the ground at its mouth the fall is sudden at first, then diminishing gradually towards the bottom. Ridges of black lava, converging from the circumference to the centre are separated from each other by intervening lines of saline efflorescence, resembling the streaks of snow in the crevasses of a mountain cirque. The centre of the crater is occupied by a small volcanic cone, which also terminates in a basin filled with a whitish substance called "natron" by the Tibbus.

The volcano and the crater at its foot are not the only indications of former igneous action in the district, now almost quiescent since the disappearance of the ancient inland waters that washed the western foot of the hills. A thermal spring, famous throughout the eastern Sahara, flows in a ravine east of the main range, some thirty miles to the south of Bardai, the chief oasis in Tibesti. This spring, known as the Yerikeh, or "Fountain," in a pre-eminent sense, is said to be so hot, and to emit such continuous jets of steam, that it cannot be approached. The reports of explosions are also incessantly heard in the midst of the vapours. Nachtigal was not permitted to visit this hot spring, which was described by the

Fig. 191.—Northern Tibesti.

Scale 1 : 5,000,000.

natives as their "only wealth." They doubtless feared he might obtain by magic art the gold mines supposed to be concealed by the jins in the neighbouring rocks. The cavities in the immediate vicinity are filled with deposits of sulphur.

Although the breadth of the Tibesti range cannot yet be determined, it seems certain that towards the central part it shows a development of over 60 miles transversely to its axis, from the plain of Borku to the Libyan desert. On the whole, the southern slopes are less abrupt than those on the opposite side. Here begins the broad plain which stretches away without perceptible incline in the direction of the Kufra oases. Towards the north-west the range is interrupted by wide depressions, separating from each other some groups of steep or even inaccessible rocks. One of these, to the north-west of Tarso, is composed of sandstone blocks, which assume the most varied architectural forms—Roman amphitheatres, Byzantine churches, frowning fortresses. Interspersed among these more regular structures, which have a mean elevation of about 200 feet, are the fantastic outlines of men and animals.

Farther on, along the same north-westerly prolongation of the Tibesti range, rise the mountains of Abo, 1,880 feet high, followed successively by those of Afafi,

whose highest peaks attain an altitude of 2,320 feet, and, lastly, those of Tummo, standing at about the same elevation. The last-named, however, form rather a hamâda intersected by watercourses, than a group of mountains in the strict sense of the term.

Tummo, which merges in the southern plateau of Fezzan, constitutes a limestone tableland, overlaid by a layer of blackish sandstone. It is furrowed in all directions, and cut up into separate blocks, which assume the appearance of towers. The tabular surface of the plateau, covered here and there with a layer of clay and shingle, is almost perfectly level, with a slight general incline in the direction from north-east to south-west. Through the Biban, or "Gates," one of the depressions in the Tummo uplands, runs the most frequented trade route across the desert, leading from Mursuk in Fezzan to Kuka on the west shore of Lake Tsad. Caravans coming from the south usually spend several days in this delightful spot, where all find abundance of pure fresh water, springing in five streams from the foot of a sandstone cliff. The steep sides of the rocks are here covered with names and inscriptions, and round about the camping-grounds have been accumulated vast quantities of camel droppings, yielding an inexhaustible supply of fuel for the passing convoys.

Towards the west the Tibesti hills fall gradually down to the plains. But in the south-west the surface is broken by sandstone heights of fantastic form, leading to the deep valleys of Borku, whose main axis runs parallel with that of the Tibesti highlands. The lowest parts of these longitudinal depressions stand at an absolute elevation of scarcely 660 feet. They are separated by intervening white, red, or violet limestone rocks from the Bahr-el-Ghasal, or "Sea of Gazelles," till recently a vast lacustrine basin, but now dried up. Even some parts of Borku belong to this depression, which communicated through a narrow channel with Lake Tsad, forming between the river basins draining towards the sea, the Nile, Niger, and Congo, the true centre of the African continent. Sweet or brackish waters bubble up in the hollows of the Borku district; but some of the valleys have no springs visible on the surface, which is often covered with alum. The oases are also threatened by some ranges of sandhills, formed by the disintegration of the surrounding sandstone rocks.

## Climate—Flora—Fauna.

Most of these rocks are bare and arid, without scrub or mosses. But for the little rain that yearly falls the whole country would be absolutely uninhabitable. The clouds gather chiefly in the month of August; consequently Tibesti belongs in respect of its climate to the Sudanese zone, the slight rainfall occurring in summer when the sun is at the zenith. Rains of a few hours' duration suffice completely to flood the narrow rocky valleys, where nothing is lost by infiltration. The torrent born of a shower rushes wildly down the slopes, in its impetuous course sweeping away the domestic animals, goats, sheep, at times even the camel. After it has passed, the valley again becomes dry, but the pure water is retained in the fissures of the rocks and in deep caverns, around which are grouped the habitations of man

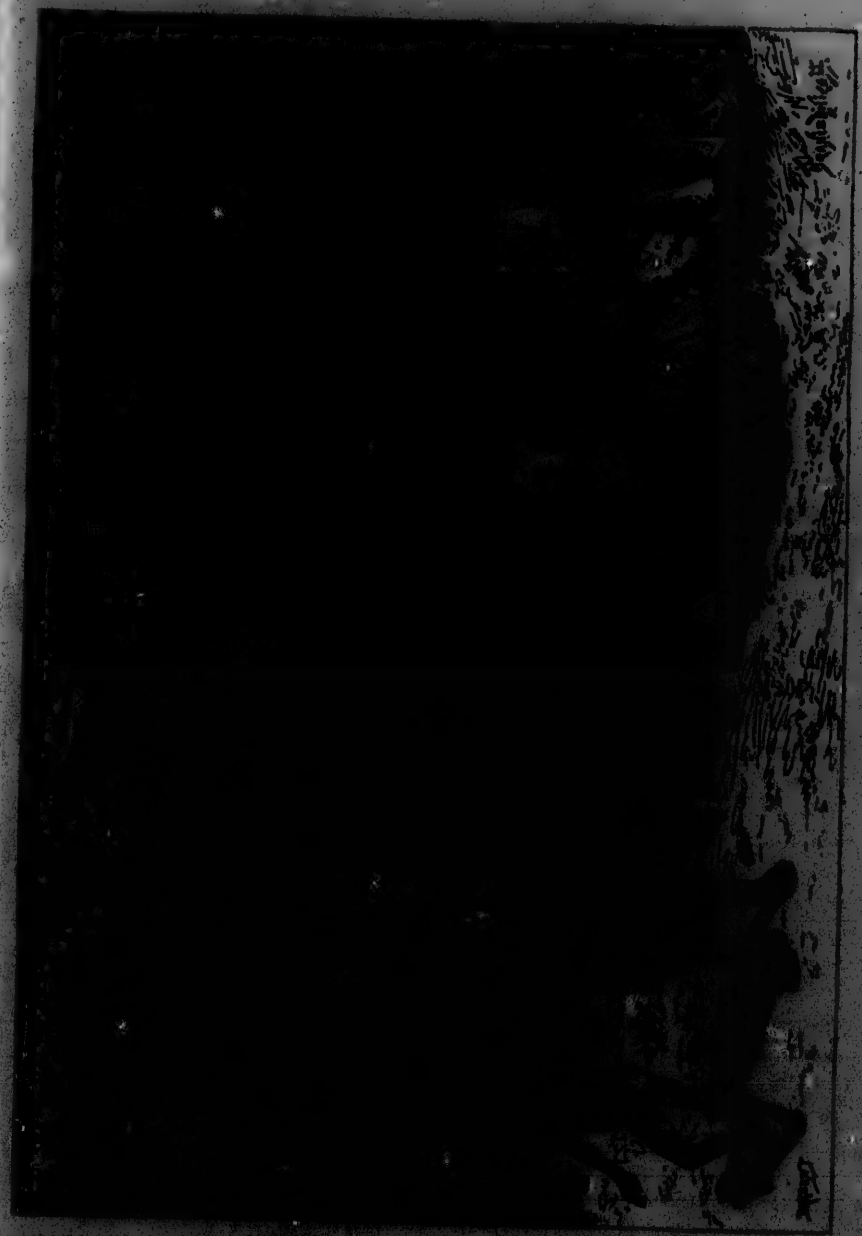
and his cattle. A little grass and a few shrubs spring up in the hollows, wherever the moisture can be stored; acacias also of various species, and one or two other plants, develop here and there a few thickets of stunted growth. In Tibesti is found the northern limit of the higlik, or "elephant tree" (*balanites Ægyptiaca*), and of the bifurcating dum-palm. The date grows in a few favoured ravines, but yields an indifferent fruit, never in sufficient abundance for the local requirements. In a few places where the rocky soil is covered with a little vegetable humus, the natives cultivate wheat, the Egyptian durra, and the dukhn of Kordofan.

The poverty of the Tibesti fauna corresponds with that of its flora. The only wild animals are the hyæna, jackal, fox, sable, the wadan and other antelopes, besides some cynocephali, who feed on the acacia, and are respected by the Tibbu hunters, believing them to be "bewitched human beings." The ostrich has become rare; but above the hilltops still hover the vulture and raven, while flocks of doves whirl round the bare rocks. Swarms of pigeons also frequent the thickets of Borku. But domestic animals are necessarily rare in a region where the few human habitations are scattered over a vast area. Amongst these oxen appear to have been formerly included, for Nachtigal discovered sculptures representing them led by bridles twined round their horns. Now, however, the ox has entirely disappeared, and only a few horses still survive in the Domar Valley, south of the main range. There is an excellent breed of camels, resembling those of the Ahaggar Tuaregs, with long legs, swift and surefooted in climbing rocky hills, but more difficult to feed than those on the Mediterranean coastlands. They are well cared for by the Tibbus, who also possess a hardy breed of asses, some slughi-hounds, and short-haired goats of good stock. The broad-tailed sheep of Egypt and eastern Mauritania is unknown in Tibesti, where it is replaced by a magnificent species with long legs and tail, covered with a thick coat of black fleecy wool. Of their skins the natives make splendid winter robes.

### Inhabitants of Tibesti—The Tibbus.

The Tibbus, or rather Tubus, according to Nachtigal, are the "Men of Tu," that is, of the rocks, and their Arab name, Tubu Reshâdeh, is merely a repetition of the same designation, Reshad having the meaning of "rock," or "mountain." The Tibbus, called also Tedas in the north, are in fact essentially rock-dwellers, and a large number are even troglodytes, inhabiting natural caverns, or else spaces amid the boulders roofed in with branches of the palm or acacia.

The Tibbus range over a vast extent of the Eastern Sahara, where they are the dominant race from the southern part of the Kebabo oasis in Kufra to Fezzan, and from Wajanga to Kawar, on the route between Murzuk and Kuka. Their domain thus exceeds 200,000 square miles in extent. The race appears to have undergone a general displacement in the direction from north to south. At least they formerly possessed the Kufra oases, where they now hold only a few poor tributary villages; their settlements have also become rare in Fezzan, whereas in the south their emigrants have established themselves in large numbers in Kanem and Bornu.



But ever since the name has been known to the Arabs, the centre of their power have been the mountains of Tibesti, the country of "rocks." In these highlands they have dwelt probably from the remotest times, for no warlike expeditions ever penetrate to these isolated uplands. Here they are surrounded on all sides by deserts of difficult access, far removed from all the great caravan routes, and holding out little attraction to aggressive or marauding tribes.

For any other people suddenly transported to these barren highlands existence would be absolutely impossible, so deficient is the country in supplies. Even for the natives, certain valleys, amongst others those opening towards the north-west, are quite uninhabitable. In this arid region scarcity is the normal condition for months together. After the summer rains the goats find the necessary pasture, and then yield in abundance the milk which forms the staple food of the Tedas. They also gather the berries of certain plants, raise a few crops, and collect the fruit of the dûm-palm, elsewhere held in small account. Nor is even the coloquintida despised, which mixed with various ingredients to remove its bitterness, is ground to a flour and kneaded with dates, in this form constituting one of their chief alimentary resources. During the date season the Tedas resort to the palm groves to gather the "fallings," which are the common property of all, or to purchase provisions in exchange for animals, arms, and woven goods. Meat they rarely eat, never killing their animals except when old, diseased, or wounded; but then the whole carcase is consumed. After being dried in the sun, it is pounded with stones so as to crush the bones and soften the sinews. The very skins are eaten, and during Nachtigal's visit the shoes stolen from him while asleep served to regale some daring thieves. Condemned by the scarcity of supplies to a life of extreme frugality, the Tedas can nevertheless occasionally consume enormous quantities of food without any inconvenience; but such gastronomic exploits are censured by all who pride themselves on their good manners.

Almost constantly living on such a frugal diet, the natives of Tibesti are naturally far from stout; nevertheless all are robust and surprisingly agile. The stranger is amazed to see them bounding along, and keeping pace with the swiftest camels during forced marches of several days. Mostly of middle size, they are perfectly proportioned in all their limbs, except the hands and feet, which seem rather too small. The complexion is lighter than that of the blacks of the southern plains, nor do their features present the flat nose, thick lips, or other marked characteristics of the true Negro. The hair is longer and less crisp, and the beard fuller than that of the Sudanese peoples. Their women are charming while still in the bloom of youth, unrivalled amongst their sisters of North Africa for their physical beauty, pliant and graceful figures.

Amongst these hardy highlanders diseases are rare, the Guinea worm, the Abyssinian taenia, the leprosy so common amongst the Arabs, the affections of the liver so prevalent in most hot countries, infectious fevers and dysentery, so dreaded on the African coastlands, being disorders almost unknown in Tibesti. They are also exempt from syphilis, scrofula, rickets, and all epidemics except small-pox. Without being absolutely unknown, diseases of the chest are at all events extremely

rare, probably more so than amongst any other people, thanks to their forced sobriety and life of hardship, passed mostly in the open air. The Tedas resist hunger for days together; when lost in the desert without food or water, they pass the day in the shade, travelling only at night. If they come upon the bone of a camel it is pounded to a sort of paste, which they mix with blood drawn from the veins of their mounts. Their last resource, when the stupor of hunger begins to creep over them, is to lash themselves firmly to the back of the animal and trust to its instinct to discover the nearest camping-ground.

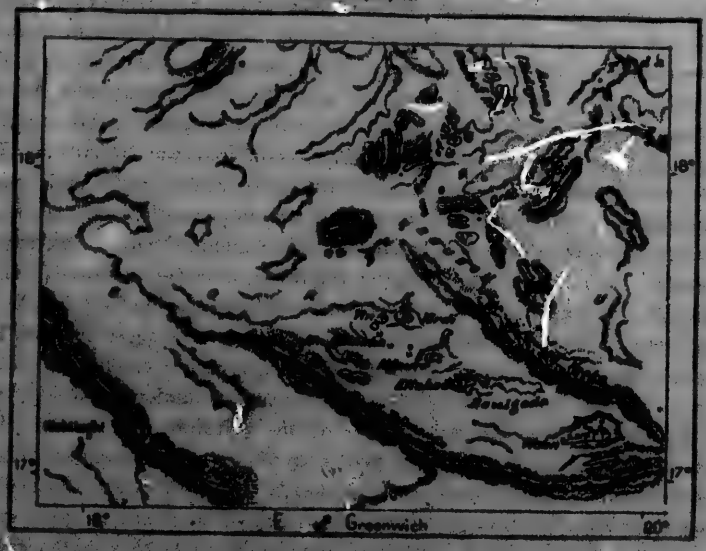
No less remarkable than their physical strength and beauty is the shrewdness and intelligence of the Tibbus. Necessity, the great educator, has developed their mental faculties while sharpening their senses. They find their way across the trackless wilderness by a sort of inspiration quite unintelligible to the European, and in all ordinary transactions they display surprising tact and skill, combined with great eloquence, cunning, and invention. Those who settle as traders in the surrounding oases easily get the better of their Negro or Arab competitors. Even their characteristic personal vanity never leads them so far as to lose sight of the main chance. The severe struggle for existence has rendered them harsh, greedy, and suspicious, sentiments reflected in their hard features and cruel expression. "Everyone for himself," seems to be stamped on the countenance of the Tibbu, who is seldom seen to laugh or unbend with his associates. The national feasts are not, like the Negro merrymakings, enlivened with song and dance, but serve rather as the pretext for rival extempore recitations and verbal contention. The Tibbu is always distrustful; hence, meeting a fellow-countryman in the desert, he is careful not to draw near without due precaution. At sight of each other both generally stop suddenly; then crouching and throwing the litham over the lower part of the face in Tuareg fashion, they grasp the inseparable spear in their right, and the shangermangor, or bill-hook, in their left hand. After these preliminaries they begin to interchange compliments, inquiring after each other's health and family connections, receiving every answer with expressions of thanksgiving to Allah. These formalities usually last some minutes, during which time they take the opportunity of studying their mutual appearance, and considering the safest course to be adopted towards each other.

In their usages the Tibbus betray the various influences of the different races—Negroes, Arabs, Tuaregs—with whom they come in contact. Like the Shilluks of the White Nile, they mark the temple with a few scars; like the Tuaregs, they wear the veil, in any case required by an existence passed in the dusty and parching atmosphere of the desert; lastly, with the religion of the Arabs they have also adopted many customs of that race. But fundamentally they seem very probably to belong to the true Negro stock. They are the kinsmen of the Daza, who dwell farther south in Borku and in the districts bordering on Lake Tsad. The two languages are related, and also closely allied to that of the Kanuri, who occupy the western shores of the lake, constituting a distinct linguistic family, of which the dialects of the Baeles and Zoghawas on the Dar-For frontier are outlying members. Of this group the oldest and most archaic appears to be that spoken by the Tedas,

or northern Tibbus, who may consequently be regarded as the typical representatives of the race. In any case they are the least mixed, the inhabitants of Tibesti being perfectly homogeneous, and entirely free from intermixture with Arab or Berber immigrants. But this remarkable race, one of the most important in North Africa, at least for the extent of its domain, and altogether one of the most characteristic groups in the human family, is numerically one of the most insignificant on the continent. According to Nachtigal, the whole nation can scarcely comprise more than twenty-eight thousand souls, of whom not more than twelve thousand are scattered over the extensive Tibesti uplands.

Fig. 196.—Borku.

Scale 1 : 2,250,000.




The Dazas of Borku are even still less numerous than the kindred Tedas of Tibesti, although their territory might support a far larger population. Nachtigal estimates them at five thousand at the utmost, while the nomads of the same region, mostly belonging to the Bulgeda nation, may number, perhaps, from five thousand to seven thousand. Partly agriculturists, partly stockbreeders, the Dazas and Bulgeda differ little from the Tibesti highlanders. Like them they are thin, energetic, and intelligent, usually exempt from disease, but less favoured with physical beauty. In this respect they form, from the ethnological standpoint, the transition between the Tibbus and the true Negroes bordering on Lake Tsad. Their speech also resembles that of the Tibbus, Zoghawas, and other branches of this group. The Dazas score the temples with two vertical incisions scarcely

differing in appearance from those used by the neighbouring peoples, yet sufficient for the experienced eye to recognise their true origin. The Dazza have also the custom of removing the uvula and the first incisors from their children at a very early age.

Both Tibbus and Dazza are supposed to have been converted to Mohammedanism about two or three centuries ago. They are very zealous Mussulmans, and recite the daily prayers with great regularity. At the time of Nachtigal's visit in 1869, they had already been brought under the influence of the Senûsiya, and some of them had undertaken the difficult journey to the Wau oasis in order to visit the branch of the order there stationed, consult them on questions of dogma, and appeal to their decision on points of law. If the Dazza are frequently described as pagans by the neighbouring tribes, the reason is because under this term of reproach the good followers of the Prophet feel themselves justified in plundering them without remorse and reducing them to slavery. At the same time there can be no doubt that a few superstitions—that is to say, some survivals of the older religions—still persist amongst them. Thus sacrifices continue to be made in honour of the springs; spells, also, of pagan origin, besides verses from the Koran and amulets derived from their Semitic neighbours, are still in use; while many of their religious observances resemble those practised by the heathen populations of Sudan. The blacksmiths are much dreaded as potent magicians, and at the same time regarded as outcasts. No Tibbu with any sense of self-respect would ever give his daughter in marriage to a worker in iron, or even condescend to treat him as a friend. The word "smith" is one of the most insulting in the language; but it is never applied to those following this industry, the people being careful not to abuse or offend them in any way through fear of some supernatural vengeance.

The Tibbu social system is not based on the principle of equality. Every village has its dardai, or chiefs, its maina, or nobles, and its common folk. At the same time, the upper classes have practically very little power, the unwritten law of custom being the true sovereign. They neither keep any troops to enforce their decrees, nor maintain any system of taxation by which they might surround themselves with sycophantic retainers. But they act as judges in all cases not requiring to be settled by the law of vendetta; they also discuss questions of peace and war, and their counsel is generally received with respect. The only privilege enjoyed by many of the nobles over their inferiors is the empty glory of being able to boast of their "blue blood."

Nor is the family governed more despotically than the community. The wife, who is generally distinguished for the domestic virtues of order, cleanliness, good management, and fidelity, is held as an equal by her husband. Even the polygamy authorised by Islam is seldom practised, although temporary emigrants usually contract a second alliance in foreign lands. Marriage is commonly preceded by a long period of betrothal, which is held to be as binding as the marriage tie itself. At the death of the groom the betrothed is united to his brother or nearest relative. As amongst the Kafirs and several other African peoples, the change of state produced by marriage is an event of such importance that all must keep the secret,

the wife especially being forbidden by social etiquette to make the remotest allusion to the subject. She neither addresses her husband in public, nor eats with him; nor has he on his part any longer the right to let his glance fall on his father-in-law or mother-in-law. In fact, he ignores his wife's relations, and is even required to change his name, like those guilty of murder.

## Topography.

The chief centre of population in Tibesti is *Bardai*, situated in a valley on the north-east slope of the mountains, about the middle course of an *enneri*, or wady, which after receiving several tributaries flows northwards in the direction of Wau. The thermal waters of the famous *Yerikeh*, or "Fountain," belong to the basin of this torrent. Around Bardai stretch the most extensive palm groves in Tibesti; hence this district is visited by nearly all the Tedas in search of dates. They also frequent the surrounding hills with their flocks, and most of their traders hold commercial relations with Murzuk in Fezzan. Others migrate to the southern oases of Borku and the neighbouring territories; but they have lost the route to the mysterious *Wadikur* oasis, which lay five days' journey to the south-west of Kufra, and which is described in legend as abounding in a rich vegetation. Like all the oases the route to which has been forgotten, it is a "paradise lost."

In Borku, oases fed by sweet or brackish waters fill all the depressions, and yield better dates than those of Tibesti. The dûm-palm also flourishes, and several Sudanese plants might here be successfully cultivated. But at the time of Nachtigal's visit the gardens were mostly abandoned, the palm groves in many places invaded by the sands, the villages forsaken by their inhabitants, and their huts made of matting overturned by the wild beasts. The Aulad-Slimans, and even the Tuaregs of the western steppes and the Mahamids of Waday, pay regular visits to these oases, plundering the granaries, capturing women and children, slaying all who resist their attacks. Thus deprived of all their effects, the Dazas either set to work again, or else take to marauding in their turn in order to collect enough money to ransom their enslaved families, whom fresh razzias may presently again sweep into bondage. Their existence is that of wild beasts beset on all sides by hunters.

In Borku the largest and best-defended oasis is *Wan*, which lies in one of the southern river valleys draining through the Bahr-el-Ghazal basin to Lake Tsad. At the palm groves of Wan begins a line of little-known oases stretching away between two parallel mountain ranges towards the north-west.

## The Oases along the Fezzan and Lake Tsad Route.

The great caravan route between Murzuk and Lake Tsad, which must sooner or later be replaced by the locomotive, is the most important of all highways crossing the Sahara from north to south. Here the space between the two cultivated zones

is not only shorter than in any other part of the desert, Fezzan being distant less than 600 miles from Kanem, but it is also occupied by several oases, such as the Kawar group, following in succession along the route. Hence this commercial highway forms a natural parting line between the eastern section of the desert, of which Tibesti is the central mass, and the western division, occupied by the heights of Air. Nor is the ethnological limit between the Tibbu and Tuareg populations far removed from this chain of oases. It oscillates a little to the west, shifting to and fro with the vicissitudes of the chronic warfare maintained by the hostile border tribes.

After crossing the "Gates" leading southwards from the southern plateaux of Fezzan, the caravans enter a reddish plain, which slopes imperceptibly in the direction of the south. The Gates stand at an elevation of about 2,160 feet, or 1,250 above Lake Tsad (910 feet), towards which the trade route runs almost in a straight line, and which is distant 570 miles. But this absolute incline of 1,250 feet is unequally distributed. Relatively more considerable in the northern part of the plateaux, it gradually falls almost to a dead level in the central region of the desert, where a uniform altitude of from 1,170 to 1,330 feet is maintained across four degrees of latitude. The undulating plateau rolls away in great billows, above which appear on the horizon regular tables of sandstone and limestone formation. Here and there in the dreary waste are seen a few groups of arid cliffs, which seem burnt up or still burning, so fiercely are the solar rays reflected from the glowing surface. The few hollows occurring in the rocky or argillaceous ground between the cliffs or sandhills contain somewhat more moisture than the surrounding spaces, and here are found the only permanent or temporary wells occurring along the track of the caravan route.

The largest of these depressions are occupied by a few oases, such as that of Yat, called by the Arabs Sahiya, or the "joyful," which runs east and west for a distance of 12 miles, and nearly 2 north and south. The traveller arriving from the vast plains absolutely destitute of vegetation might be tempted to speak of Yat as a "forest," so striking is the contrast presented by its thickets of wild dates, acacias, and grassy glades with the surrounding sands. The dûm-palm also grows in great abundance in this oasis, where it reaches its northern limit in this direction.

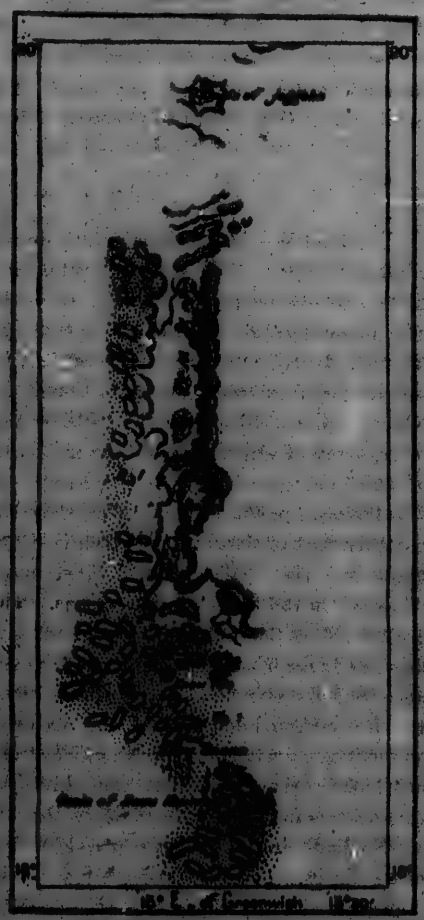
The Yeggeba oasis south-west of Yat is much smaller and less peopled, while that of Siggedim, although abounding in dates, was no longer inhabited at the time of Nachtigal's visit in 1870. But that of Jebado, situated to the north-west, is occupied, like Yat, with Teda and Kanuri communities. It has been once only visited by a European in 1869, when this last station of the Tedas and their Kanuri kinsmen in the direction of the west was traversed by Beurmann.

### Kawar.

Kawar, separated by a stony hamada from Yeggeba, stretches in the direction from north to south for a distance of about 50 miles. The caravan route traverses it from end to end between a long avenue of palms interrupted here and there by

sands and rocks. Immediately to the east stretches a rocky ridge parallel with the oasis, and in some places rising to a height of 330 feet. Perhaps from this ridge Kawar takes its Teda name of Enneri Tugheh, or the "Valley of Rocks." Most of the twelve hamlets dotted over the depression belong to the Tibbus. They stand at the foot of a sandstone block with vertical walls, which serves as a place of refuge in case of sudden attack. The stronghold is pierced with galleries and underground chambers used as stores for provisions. Cisterns are also excavated in the live rock, and a sort of stairs or inclined plane formed with trunks of palms gives access on the outside to the summit of the citadel.

Fig. 194.—Kawar Oasis.
Scale 1 : 1,700,000.



The villages, inhabited chiefly by Kanuri immigrants, are built in the same manner as the towns of Haussa, being regularly laid out with houses lining the straight streets, and the whole surrounded by a common enclosure. Thus was constructed, probably in the eleventh century, the town of *Dirki* or *Dirko*, capital of the entire oasis. *Garu*, a more populous place at the southern extremity of Kawar, is also built in the style of the Sudanese towns, and most of its inhabitants are of Kanuri origin.

The beauty of the Teda type has not been impaired by crossings. In the Kawar oasis the women are distinguished by the same regular features and well-balanced forms as their Tibesti sisters; but they have over and above a graceful carriage, soft expression, and charming smile. The feasts are more cheerfully celebrated, the processions and cavalcades more sumptuous than in the eastern highlands. Nor are the customs the same along this great caravan route as in the more sterile and secluded native hills of the race. The dardai, who more frequently takes the title of mai, or "king," exercises real authority over his subjects. But he finds a rival power in the person of the mkaddem of the Senûsiyas, who resides at the convent of *Shimedru*, not far from the capital.

The inhabitants of Kawar are also subject to other masters, the redoubtable Aulad-Sliman Arabs, who after long sojourning on the steppes of the Tripolitana coast, have sought other pastures and other fields of plunder in the neighbourhood of Lake Tsad. Hereditary foes of the Tibbus, they often suddenly sweep down on the Kawar oases, slaying the men, carrying off women and children, and retiring laden with booty. The villages remain unpeopled for a time, but a short period of peace suffices for fresh immigrants to come and occupy the empty houses. At the time of Nachtigal's visit the dwellings scattered over various parts of the oasis would have afforded homes for a population of six thousand; but all the inhabitants numbered no more than two thousand three hundred.

### The Bilma Salt Pans.

It cannot be said that immigrants are attracted to the oasis by its fertile soil or abundant crops. The dates of its palm groves are of poor quality, and the inhabitants scarcely venture to occupy themselves with field operations. But the advantages derived from the transit trade through this important station, midway between Murzuk and Kuka, are sufficient inducement to settlers, notwithstanding the dangers they run from Arab marauders. Kawar also possesses a local treasure, which secures it customers from a large part of the Sudan. These are its saline lakes, many of which surround the capital towards the centre of the oasis and one of which swarms with "worms" (*artemia salina*) like the Bahr-el-Daud in Fezzan. But the most productive salines are those situated in the *Bilma* district, that is, the northern part of the oases, in which is situated the town of Garu. Here the salt basins are very shallow, and divided into compartments by clay walls, like the "bosses" in the French saline lagoons. Through the effect of evaporation, crystals are formed on the surface of the water, which mingling with the sand and dust brought by the winds, soon constitute a greyish incrustation differing little in appearance from the surrounding soil. On the bottom is precipitated another layer of salt, which is collected and divided into lots according to its quality, for the use of men and animals. Afterwards it is fashioned into blocks of various forms, a camel-load of which is bartered for about four shillings' worth of corn. In the Sudan markets this price is increased at least thirtyfold.

No doubt, in the various regions of Sudan salt can be procured by the combustion of certain plants and by several other processes. But they are all so tedious and difficult, and the yield is of such a poor quality, that the chief supply naturally comes from the desert. No region of the Sahara contains larger deposits of excellent salt than the Bilma district, which accordingly attracts buyers from far and wide. In order to welcome the strangers, the native women receive them by throwing handfuls of salt over their clothes, as if to say, "The best of the land for you!" According to Nachtigal, seventy thousand camels come every year for their load of salt at the Bilma salines, and some of the salt caravans, such as those of the Tuareg traders with Hausas, comprise as many as three thousand pack animals. The Tedas have a monopoly of the transport between the Kawar oasis

and the Tibesti country, while the trade with Kanem and Bornu is in the hands of the kindred Dasa tribes. But all the regions west and north-west of Kawar are supplied by the Tuareg caravan merchants, who exercise a sort of suzerainty over the inhabitants of the oasis, even forbidding them to cultivate wheat, in order to keep them always dependent on themselves for this indispensable commodity.

East and west of Kawar caravan stations and settlements occur only at long intervals. The first villages of Tibesti lie 240 miles to the east; the distance is 500 miles to Rhat in the north-west and 420 to Agades in the Air district. On the difficult route to this place, which traverses a stony and waterless hamada, the chief station is the *Agram* oasis, an outpost of the Tibbus towards the west. But immigrants from Bornu also share the narrow settlement in the desert with them.

## Dibbela—Agadem.

The region intervening between Kawar and the border zone of Sudan is one of the most desolate in the Sahara. Here dune follows dune, rolling away in great waves some 50 feet high, and all disposed from east to west, that is, in the same direction as the regular winds of the desert. The boundless waste of shifting sands is interrupted only at one point by the Kau Tilo, or "Isolated Rock."

After passing the small oasis of Zau, the caravan again enters the limitless region of dunes, where for a space of 60 miles the convoys are continually ascending and descending the interminable series of sandhills. Here especially the camel, constantly appearing and disappearing, like a storm-tossed vessel, may best be called the "ship of the desert." The southern limit of this region of dunes is marked by the rocks of *Dibbela*, where the English explorer Warrington perished. This point already lies beyond the limits of the Sahara properly so called, and the traveller now enters the zone of steppes everywhere skirting the northern verge of the well-watered Sudanese regions. Here grass grows in abundance, at first in the depressions between the undulations of the land, then on the rising grounds themselves. The grey or yellowish tints of the desert give place to the verdant hues of vegetation, and in the *Agadem* oasis is met the first tree which is neither a palm nor an acacia. This is the tundub (*capparis sodata*), distinguished by its twisted and gnarled trunk and its widespread hanging branches.

Few regions in the world more abound in animal life than this zone of Saharian steppe lands. Here the gazelles graze together in flocks of tens and hundreds, and in many places the traveller might fancy himself in the midst of a vast park well stocked with domestic animals. He feels that he has already crossed the desert.

## Jebel Ahaggar and Surrounding Plateau (North Tuareg Domain).

West and north-west of the "Gates" traversed by the route between Fezzan and Lake Tsad, the main axis of the Sahara is prolonged through a line of rugged peaks, which gradually rise to heights of from 4,000 to 5,000 feet. The ravined

plateau thus developed is probably the region described by the mediæval Arab writers under the name of the Jebel Tantana. South of Rhat a narrow breach in the plateau opens a way for travellers proceeding in the direction of Air. Nowhere does nature assume a more forbidding and inhospitable aspect than in these wild mountain gorges. The absolute nakedness of these escarpments, the sombre glitter of the blackish sandstone rocks, the fantastic outlines of the heights, without a blade of grass or tuft of moss, all forms a picture of desolation producing on the wayfarer a sense of awe far more impressive than the endless waste of sands themselves.

In the midst of these jagged cliffs, and especially in the Janet district, lying west of the breach, a few cavities are filled with water, and according to native report several of them harbour crocodiles. South of the plateau the route descends rapidly towards the plain through a series of dangerous inclines flanked at first by sandstone walls, and farther south by granite cliffs.

### Recent Expeditions.

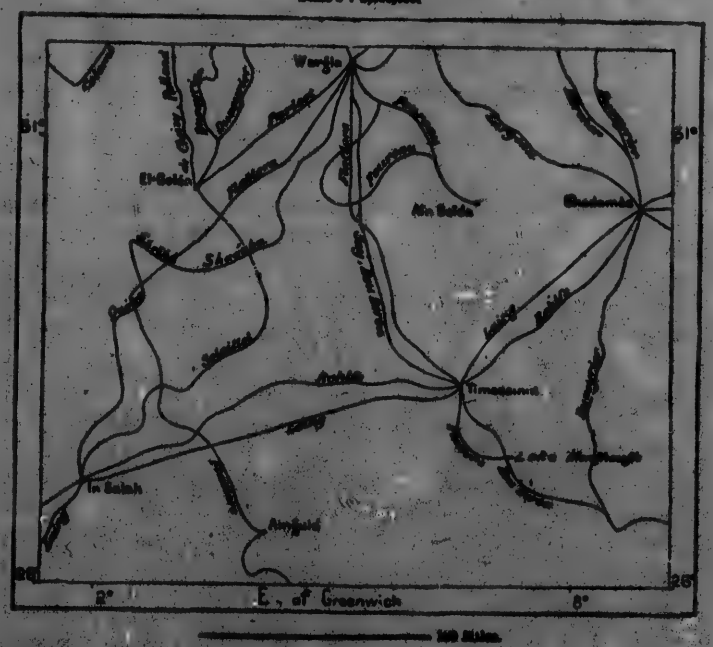
West of the breach, which was traversed by Barth and his associates, the mountains and plateau are scarcely known except from the reports of the natives. Nevertheless the northern outskirts of this region have been visited by Duveyrier, and since his memorable exploration of 1860, by the two peaceful expeditions commanded by Flatters. Laing also skirted the same highlands in the year 1822, at the time of his journey across the Sahara to Timbuktu. But his journal was lost, and none of his observations ever reached Europe. Rohlfs travelled over nearly the same ground as the English explorer, but from the opposite direction, between Twat and Ghadames.

The unfortunate events attending the two expeditions to the Tuareg country under the direction of Flatters, which were equipped to cross the desert from north to south, are still fresh in the memory. The first, organised at Wargla in 1880, deviated from the route laid down beforehand, and ended by taking the road to Rhat, without, however, reaching that oasis. Worn out by the dilatory negotiations with the Tuareg chiefs, and finding all their supplies and money exhausted at this early stage of the journey, the members of the expedition were obliged to return. A second mission, composed partly of the same officers, started the following year in the direction of the desert. It penetrated farther south, beyond the district of North Tasili; but it ended in disaster. The caravan, divided into detached groups, following each other at intervals of several miles, had been secretly pursued to the west by a constantly increasing horde of Tuaregs; traitors had insinuated themselves into the presence of the leaders, offering to serve as guides, and every preliminary measure was taken for a preconcerted attack. At the fatal moment Flatters, overtaken while almost alone, is killed with one of his companions, the camel-drivers make off, and the whole body of Tuaregs fall upon the convoy approaching from a distance. The fifty-nine survivors of the first onslaught were compelled to break up the camp during the night, and begin their

retreat in the direction of Wargla, 480 miles distant in a straight line, and 720 following the chain of wells. All the French members of the expedition perished in this disastrous retreat, and thirteen men only reached Wargla, after a fearful march of over two months, during which they had at times nothing to drink but blood, and nothing to eat except human flesh. Nevertheless the fact that the fugitives were able to fight some successful engagements along the route, and gain many stations before being overwhelmed, is a sufficient proof of the possibility of conducting an expedition successfully across the Tuareg territory. A caravan

Fig. 196.—Routes of the Chief Explorers between Algeria and the Tuareg Territory.

Scale 1 : 8,000,000.




properly supplied with provisions, and keeping carefully on its guard, might certainly traverse the country from end to end. Those whom circumstances had turned into traitors and marauders would remain faithful in the presence of superior forces.

## North Tassili and Tademait Uplands.

The plateau in which is gradually merged the Janet mountain range, is known by the name of Tassili, a Berber word accurately indicating the aspect of the land. This Tassili, qualified as "Northern," or "of the Azjars," to distinguish it from other plateaux lying to the south of Ahaggar, consists of extremely rugged uplands, whose main axis runs in the direction from south-east to north-west, along

the line of the system beginning in Tibesti. The escarpment of the plateau, limited to the south-west by the quaternary alluvia which constitutes the Saharian plains, seems to be continued in the same normal orographic direction.

Towards the centre of this escarpment rises a group of heights, designated, like so many others in this region, by the name of Adrar, or "the Mountains," in a pre-eminent sense. According to Duveyrier, Mount In-Ezokal, culminating point of the system, and rising to a height of over 5,000 feet, is certainly a volcanic crest,

Fig. 196.—Geology of the Sahara South of Algeria.

Scale 1 : 15,000,000.

whose lavas have spread over the underlying Devonian formations of the plateau. Towards the west the Tassili is cut up into isles and islets, while on the north side the depressions of the wadies penetrate like gulfs and inlets into the mountain mass. The plateau is thus divided into a number of fragments, each of which is known by a separate name to the local Tuareg tribes.

Egueleh, the block lying nearest to the Wed Righ, is encircled on the east, north, and west by the Edeyen, or "Sands." The Khanfusa eminence (1,940 feet), the first Devonian rock occurring on the route from Tugurt to Ideles, in the

Ahaggar highlands, is also a fragment of this broken plateau. West of the depressions, through which formerly flowed the waters of the Igharghar river system, other rugged plateaux belong to the same Devonian formation; but they are no longer disposed in the direction of the East Sahara highlands. The Mudir, which forms the waterparting between the Wed Igharghar and the rivers of Twat, develops a long triangular mass in the direction of the west. Towards the eastern extremity of this plateau rises the Ifettessen peak, which, like the great crest of the Adrar system, is supposed by Duveyrier to be a volcanic cone.

North of the Devonian plateaux, which follow successively from the neighbourhood of Rhât to and beyond Inesalah, all the rocky formations rising above the alluvial plains, or which are not covered by the sands, belong to the chalk systems. Such is the Tinghert plateau, that is, the "Limestone," a long hamada, which forms the western and south-western prolongation of the "Red Hamada" of Tripolitana. Such is also the Tademait, which develops a sort of circular rampart round the north side of the Twat oases, and unites with the plateau of El-Golea in the Algerian Sahara. Towards the south and west the Tademait terminates in bold headlands and steep cliffs, presenting an effectual barrier to the encroaching sands. But on the opposite declivity the hamada slopes towards the north-east, and is here furrowed with ravines, which are occasionally flooded with torrents flowing to the Wed Miya. In this direction the zone of rocky uplands has in many places been invaded by the advancing dunes. Altogether the cretaceous formations in the regions to the south of Algeria are disposed in the form of a vast horseshoe, sweeping round the basins of the Wed Miya and Lower Igharghar.

## Jebel Ahaggar.

The chalk formations of Tinghert and Tademait and the Devonian plateaux of Muidur and the Northern Tassili are followed in the south by the crystalline rocks of the Ahaggar system, enclosed by isolated rocky groups of the same origin. Towards the east rise the Antief hills, whose highest peaks, from 5,000 to over 6,000 feet, were observed by Barth during his journey from Rhât to Agades; in the north the Egnereh plateau, where the normal granite rocks show faults of volcanic origin; in the north-west the *Iotan*, or "crest" of Ahenet, which is continued in the direction of the Twat oases.

Viewed as a whole, the central group, of circular form, presents a circumference of over 360 miles, consisting of superimposed plateaux, which rise in successive stages from altitudes of 1,600 or 1,800 feet to over 6,600 feet above sea-level in the region of winter snows. According to our maps, which are for the most part a reproduction of that traced on the sands by the Targui sheikh, Othman, for his friend Duveyrier, the Ahaggar is dominated in the centre by the culminating plateau of Atakor, crowned by the twin Watellan and Hikena peaks.

The whole system terminates northwards in the Tifedest headland, whose last spur, the volcanic cone of Udan, by the natives commonly called the "Nose of Ahaggar," rises abruptly above the surrounding Quaternary alluvial formations.

Other summits also, including perhaps the two culminating peaks, are probably of volcanic origin, lavas and ashes spread over the underlying granite rocks. For a long time the belief, based on the reports of the Tuaregs, prevailed that the Ahaggar also contained deposits of "black stones that burn," that is to say, coal. But these burning stones would appear to be certain porous lavas, which are filled with oil and lit up like lamps.

The southern Ahaggar has not yet been visited by any European explorers, and still remains as little known as the plateau bordering it on the south, which is indicated on our maps by the name of the Southern Tassili, or Tassili of the Ahaggars. From the reports of the Tuaregs it is known to be a rocky region, waterless, and destitute of vegetation, carefully avoided by the caravans and nomads. The camels which stray into these desolate uplands are said by the natives to perish of want, or else revert to the wild state, for no one will expose his life by going in search of them.

### The Ahaggar Waterparting.

Lying in the very centre of the Sahara, the Jebel Ahaggar would constitute a waterparting for the surrounding fluvial basins, if the rainfall were copious enough to develop perennial streams beyond the limits of these highlands. Nevertheless there can be no doubt that the running waters descending from the Ahaggar Mountains lose themselves beyond the upland valleys in sandy beds, which, under different climatic conditions, formed the channels of large rivers draining in various directions. Northwards flowed the affluents of the Wed Igharghar; to the south were collected all the streams which, through the common bed of the Tafasasset, went to swell the volume of the Niger; the western valleys of the Tighehert, Tarhit, and other rivers belonged to the Messaura hydrographic system.

It is still uncertain whether the basin of the Messaura drained to the Atlantic, as was supposed by Duveyrier, making its way to the Wed Draa through all the obstacles opposed by the dunes of Iguidi, or else is a tributary of the Tighehert and Niger, as might seem more probable from recent information regarding the general slope of the land. But according to the barometric measurements taken by Rohlfs in the Twat oasis, the Tighehert or Teghasert could never at any time have reached the Niger. To do so its waters would have to ascend over 330 feet in a space of about 480 miles. At the same time the data supplied by a traveller, whose rapid observations cannot be compared with those of other explorers, can scarcely be accepted as offering a final solution of the question. The problem of the drainage of the Messaura basin, one of the most important in African geography, cannot therefore be regarded as yet solved.

### The Igharghar Basin.

Even the Igharghar basin, although already explored by numerous travellers, is itself still insufficiently known; nor can it yet be said with certainty to belong altogether to the system of the Algerian shotts. There can be no doubt that a Wed Igharghar takes its rise on the northern declivity of the Jebel Ahaggar,

flowing as a perennial stream round the eastern foot of the Udan plateau. Then, after receiving some affluents from the Eguereh district, its course is continued between the Northern Tassili and the Irawen Mountains down to the alluvial plains which stretch north of the Devonian plateaux. So far its course is quite clear, and its slope perfectly regular. Near the Temassinin zawya, at the southern foot of the zone of chalk formations, its bed stands at an absolute altitude of 1,250 feet. Here it is joined, if not by the waters, at least by the formerly flooded valleys, which have their source in the central depressions of the Northern Tassili plateau.

The main outlines of these affluents of the Igharghar, the Weds Igharghareu and Issawan, are clearly indicated by chains of dunes, high banks, windings, and serpentine meanderings in the sands. Farther north is also distinctly seen a breach or gorge traversing the region of cretaceous formations. But farther on the incline soon becomes indistinct. It becomes uncertain whether its course is continued northwards, and it is impossible to say in what direction the water would flow were the depressions again flooded. Nor in this section of the Wed Igharghar has any current been seen in the memory of man. What at first seems to look like a river-bed running between banks, with a breadth varying from 1 to 6 miles, becomes farther on completely merged in the surface of the surrounding desert. It is a mere succession of hollows interrupted by sandhills, and in many places the valley has been entirely closed by the shifting sands. According to Duveyrier, the junction of the Igharghareu and Igharghar is effected by an underground channel flowing beneath the dunes.

## Lake Miharo.

Numerous lakes are scattered over the cavities in the Northern Tassili district, and in the outer cirques, where the torrents take their rise. Duveyrier has suggested that these lakes are old craters of extinct volcanoes, where the waters have gradually collected. But this cannot at all events be the case with the meres usually designated by the name of "Lake" Miharo, and even by the natives spoken of as *bahr*, or "sea." These flooded depressions, which were visited in the year 1876 by Von Bary under the escort of a Tuareg from Rhât, are nothing more than the hollows in the channel of a wady, where the water remains throughout the year. When it flows in sufficient abundance from the hillside, these pools become united in one basin, which during the dry season is again broken up into a number of separate ponds.

In the vicinity rise some gaseous springs, which the natives have named Sebarhbarh, or the "Garglings," from the bubbles incessantly rising from the bottom and bursting on the surface. According to Von Bary, the water of these springs, without reaching the boiling-point, as asserted by the Tuaregs, is slightly thermal, with a normal temperature exceeding 200° F. The German explorer saw no crocodiles in the Miharo ponds, but detected very distinct traces of their presence. These saurians, which are much dreaded by the surrounding nomads, do not appear to exceed 6 or 8 feet in length, judging at least from the imprint of their feet.

### Lake Menghug.

To the north-west, and on the same slope of the plateau, in the valley of the Wed Tijujelt belonging to the Igharghareu basin, is situated "Lake" Menghug, which was visited by the first expedition under Flatters in the year 1880. This is a pond, which in average seasons has a length of about 1,100 yards, with a breadth of over 300 feet, and a depth of 12 or 13 feet. But in the dry season it falls about 10 feet, and then becomes a simple spring resembling the Sebarhbarh. After heavy rains it again rises, flooding a vast cirque of dunes and watering the roots of the surrounding tamarisks.

The French officers saw no crocodiles here, but they captured some very large fishes, all belonging to species which are also found in the waters of the Nile and Niger. Further evidence is thus afforded of the former existence of a much more humid climate than now prevails. Large rivers flowed across vast tracts which at present are sandy wastes; the aquatic animals passed from river basin to river basin, whereas now they are confined to narrow limits, and threatened with total extinction should the waters become evaporised during exceptionally dry seasons.

### The Amadghor Saline.

On the opposite slope of the Tassili, between that plateau and the Ahaggar highlands properly so called, is situated an extensive sebkha, which was formerly a great lacustrine basin. The overflow of the lake drained either south-eastwards through the Wed Tafassasset, or northwards to the Wed Igharghar. This saline depression lies almost exactly on the line of waterparting between the Mediterranean and the Niger basin. The Amadghor, as it is called, was visited for the first time by Europeans during the second expedition commanded by Flatters. But the fatal end of that mission has deprived geographical science of the maps and reports relating to this part of the route. It is known, however, that the Amadghor plain is very extensive, a march of five days being required to traverse it.

The saline, being fed by the streams flowing from the Eguereh valleys and from the Jebel Ahaggar, probably receives a considerable quantity of water. The salt here deposited is of excellent quality, and sufficient might be procured to supply a population of many millions. But the exploitation of the saline has had to be abandoned, in consequence of the incessant tribal warfare carried on by the surrounding Ahaggar and Asjar people. For the same reason the great fair formerly held in this district has been replaced by that of Rhât. There can be no doubt, however, that the restoration of peace in these regions would have the effect of restoring its commercial importance to the Amadghor sebkha, and again constitute it a centre of trade and market for the caravans journeying between the Sahara and Sudan.

### Flora and Fauna.

The relative abundance of water in the Jebel Ahaggar naturally imparts a considerable variety to the flora of this region. In the better watered valleys the

acacias, especially those yielding gum arabic and other essences, develop veritable forests. In the neighbourhood of Lake Miharo, Von Bary even found thickets of trees matted together by creeping plants in a dense mass of impenetrable verdure. The least shower suffices in a few hours to clothe the naked soil with a carpet of rich grassy vegetation. Duveyrier tells us that he saw vast arid tracts thus covered in a single day with the softest herbage after a rainy night. Within seven days the young grass, called "spring" by the Tuaregs, is already advanced enough to supply fodder for the herds.

Amongst the common plants of the district mention is made of the falezles, a species of henbane, whose toxic properties increase in direct relation to the altitude of the ground on which it grows. Almost harmless in the low-lying valleys, it becomes dangerous on the lower terraces, and a deadly poison on the highlands, but not for ruminating animals. Its foliage fattens the camel and goat, but is fatal to the horse, ass, dog, and man. The cultivated flora of the Tuaregs comprises a very limited number of species: two trees only, the date and fig; the vine, and four kinds of cereals, wheat, barley, sorgho, and millet.

The lion does not appear to survive in the Ahaggar uplands, which are also free from the presence of the panther, wild boar, buffalo, rhinoceros, and hippopotamus; but the Tuaregs are familiar with the sight of wolf and hyæna. On the plateaux and in the plains surrounding the Jebel Ahaggar antelopes are numerous, while herds of wild asses are met on the north Tassili uplands. They are too swift to be followed in the chase, but a few are occasionally captured by means of snares. The wild ass is said to attack and kill the domestic species.

## The Mehari Camel.

The margins of the sebkhas and the wooded depressions are enlivened by the flight of a few rare birds, belonging to a very limited number of species. The traveller may journey for a whole week in certain districts of the Sahara without meeting a single winged creature. The Tuaregs have for domestic animals the horse, ass, sheep, goat, slughi greyhound, and even the ostrich. Duveyrier saw one of these tame ostriches, which was tethered like cattle left on the grazing grounds. But the Tuaregs' special care is the camel, their most beloved companion, without whose aid they would find it impossible to support existence in the vast arid spaces stretching across the Sahara from the Wed Righ to the Niger. It is owing to the camel that the Targui has adopted a nomad in preference to an agricultural life. In many of the upland valleys in the Ahaggar highlands, the inhabitants might be able to live on the produce of the land. But the owner of a camel finds it impossible to settle down in one place. He is compelled, according to the seasons and rainfall, to move about in search of the pasturage most suitable for his camels.

The herds consist especially of pack animals, which are occasionally equipped for rapid marauding and other expeditions. But those intended for speed constitute a special variety, the so-called *mehari*, in Berber *arhelam*, which is distin-

guished by its great height, the grace and elegance of neck and legs, remarkable swiftness, and amazing endurance. Even when suffering pain, the mehari utters no cry, for fear of betraying his master. In summer, when on the march and loaded, he can hold out without food for seven days; in winter he remains two months on the grazing-grounds without requiring to be watered. While the pack animal usually advances at the rate of from 2 to 3 miles an hour, or about 15 miles for a day's march, the mehari easily gets over the same number of leagues in the same time. Foureau mentions the case of an Inesalah sheikh who covered a distance of about 180 miles in two days, mounted on one of these mehari.

The breeding of camels occupies such a large portion of the life of the Targui, that dozens of terms have been developed to designate the mehari at all ages, in every condition of health or disease, every shade of colour, every state of work or repose. The animal is trained with the most sedulous care both for war and the course, and there are few more beautiful sights than that of a troop of mehari equipped for an expedition, or drawn up in order of battle. The animal with outstretched neck and his rider with upraised spear seem at a little distance to form a single living being of strange and formidable appearance. The mehari reserved for the use of the women are taught to amble to the sound of music. When the Tuareg women came to salute the members of Flatters' mission, one of them played some of the national airs on a kind of mandolin, while her mount accompanied the cadence with regular steps executed with surprising accuracy.

The Targui always directs the movements of the animal by means of his bare feet. Seated on the high saddle, his back resting against the support, his legs crossed round a sort of cruciform pummel, he presses the camel's neck to the right or left with his feet, thus keeping both arms free to handle his weapons. Hence in battle his aim is always directed against his opponent's feet. These once maimed, the animal obeys no longer, and ceases to act in concert with his rider. Formidable in war, and indispensable for all purposes of transport, the camel contributes also to the support of the natives. Its milk is almost the only nutriment of the family during the grazing season; its hair is used to make cordage; its droppings serve as manure for the palms, or else, when dried, as a valuable fuel. It is also at times led to the shambles, its flesh being reserved for the entertainment of distinguished guests. Lastly its skin, one of the very best of its kind, is utilised for the manufacture of tents, trappings, harness, and household fittings. For the Targui, the camels are thus a source of inestimable wealth. But they are relatively far from numerous, the most opulent of these highlanders rarely owning a herd of more than fifty head.

### The Tuareg Berbers.

In the country of the Tuaregs, as well as in Tripolitana, Fezzan, and the Algerian Sahara, stone implements, and other objects dating from prehistoric times, have frequently been found. Travellers have also discovered ancient burial-places,

which have been repeatedly rifled by treasure-hunters. But it can be no longer determined to what populations are to be attributed these remains of bygone times. From time out of mind the Central Sahara has always been roamed by the Tuareg Berbers, who were certainly in possession of the land when the Arabs penetrated westwards to Mauritania, and found themselves for the first time face to face with these children of the desert. It was the Arabs who gave them the name of Tuareg, that is to say, "Abandoned," "Forsaken of God," in consequence, say the Arab writers, of the resistance long offered by these "Sabean or fetish peoples" to the progress of Islam.

The Tuaregs, who did not accept the teachings of the Prophet till the third century of the Hegira, call themselves Imohagh, Imoshagh, Imajirhen, according to the various dialects. The term is identical with that of the Amazighs of the Jurjura highlands in Algeria, and of the Imazighen of Morocco, all these forms being derived from a common root involving the idea of freedom, proud independence of all control. Their origin, however, is manifold, for they are "mingled together and interwoven like the tissue of a tent-cloth, in which camel hair and sheep's wool are so combined in one texture, that the expert alone can distinguish between the hair and the wool." Thus speaks Sheikh Brahim Uld Sidi, reputed the most learned of all Tuaregs.

By their alliances, the great Berber families of the Central Sahara, perhaps originally of Sanhaja stock, may claim the title of Arabs, and even of Shorfa, being indirectly connected with the pedigree of the Prophet. The Imohaghs are divided into a vast number of tribes grouped in four great confederations—the Azjars and Ahaggars or Hoggars in the north; the Kel-Owi and Awellimiden in the south. Collectively the Tuareg race occupies about one half of the Sahara, and the Temahaq (Temashaq, Tamazight), as the national language is called, is spread over a fourth part of the continent, from the oasis of Jupiter Ammon (Siwah) to the shores of the Atlantic. This term *Temahaq* is itself probably to be identified with that of the *Temehu*, people mentioned on the old Egyptian monuments of Edfu.

### The Azjar Confederation.

Of the four confederations, that of the Azjars, occupying the north-eastern section of the vast Tuareg domain between Fezzan and Algeria, takes the foremost rank, not in numerical superiority or wealth, but in general culture and refinement, as shown by the encouragement it offers to international trade. Thanks to the friendly influence of the Azjars, European travellers have been able to penetrate into the interior of the Sahara, and study the physical and social conditions of that region. Of all Tuareg peoples, the Azjars show the greatest tendency to abandon the nomad for a settled life. One of their tribes, the Tin-Alkuma, called Tisilkum by Richardson, have even already taken up their residence in some cases cultivated by themselves in the neighbourhood of Mursuk and of Rhât.

Formerly the most powerful Azjar tribe was that of the Imanans, or "Sultans," so-called because to them belonged the amenokal, or sovereign of all the northern

Tuareg peoples. But at present the dominant tribe is that of the Oraghens, whose territory comprises the valleys of the Wed Ighargharen, Miharo, and Janet. The most civilised appear to be the Ifoghas, who are specially regarded as the allies of France, owing to the protection they extend to all European travellers in their country. Sheikh Othman, a member of this tribe, was the person who accompanied Laing to Insalah, and collected his papers. On three other occasions the

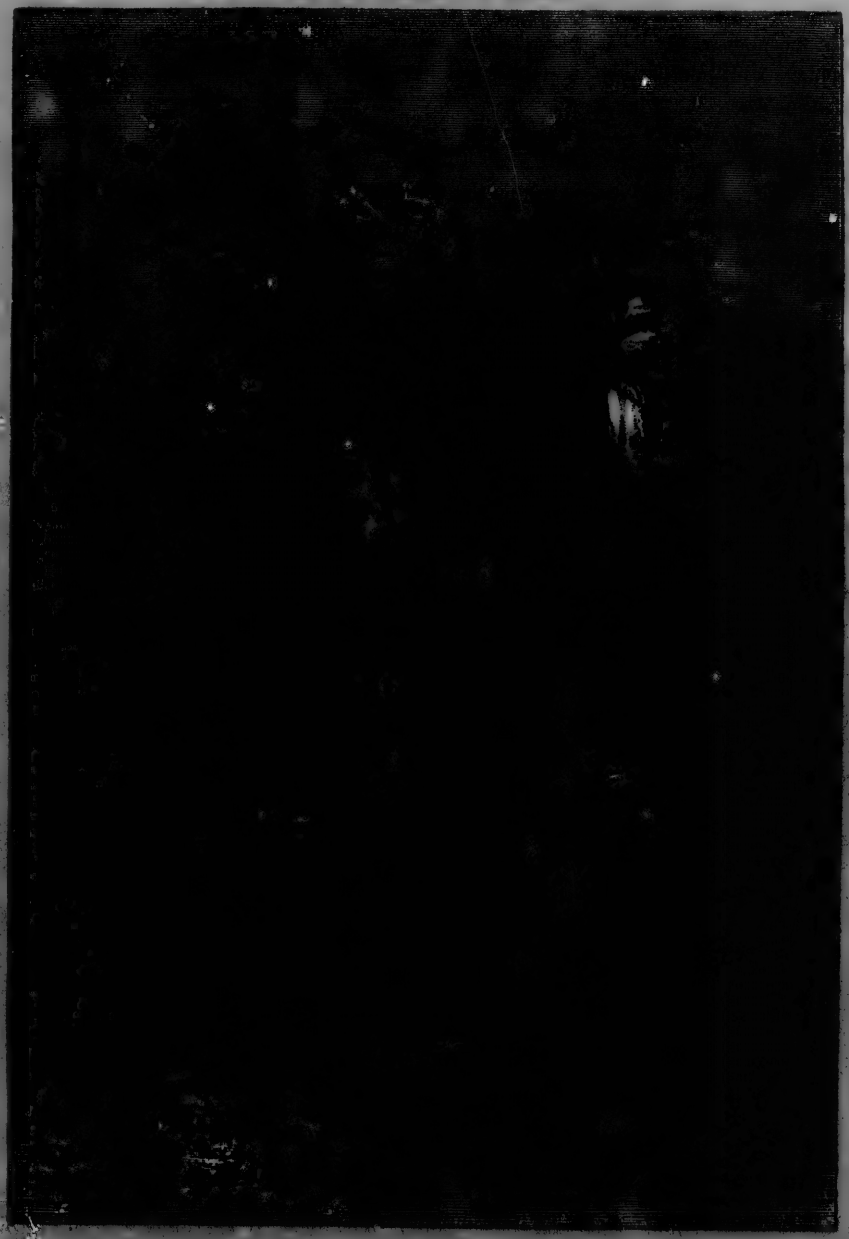
Fig. 197.—Tarqui Type.

same sheikh escorted French travellers through his territory, amongst others Duveyrier, to whom we are indebted for so much valuable information on the physical and social condition of this region. He was also the first man of his nation to leave the desert and make a journey to Europe. The Ifoghas enjoy great influence in their character of marabuts and dealers in amulets; in this capacity they are met in all the northern regions of the Tuareg country.

The confederation of the Ahaggars, the Hoggars of the Arabs, is far more

warlike and consequently much more dreaded than that of the Azjars. Inhabiting

Fig. 198.—Tuaregs on a Journey.



a mountainous region, whither no one dares to pursue them, their tribes who

refuge in these inaccessible recesses, where they defend themselves as in a stronghold, and whence they can conveniently sweep down on the surrounding districts. The ruling tribe of the Ahaggars are the Kel-Rhelas, who occupy the central parts of the plateau, the rallying-place of the whole confederation. The authority of its amghar, or chief, is also acknowledged by all the other tribes throughout these highlands.

### The Northern Imohaghs.

Nearly all the Ahaggars are pastors, a very small number occupying themselves with agriculture. Duveyrier estimates at thirty thousand at the utmost all the northern Tuaregs, or a little over a thousand persons per tribe. The territory roamed over by them has a superficial area of about 400,000 square miles, being in the proportion of one square mile to every thirteen persons.

Most of the Tuaregs are of tall stature, with slim figures and robust constitution. Naturally of fair complexion, they acquire a bronze tint in the sun. But although differing little from southern Europeans in colour and the regularity of their features, they can always be distinguished by their slow but somewhat jerky gait, long stride, and haughty carriage of the head. Duveyrier compares their attitude to that of the ostrich or of the camel, and attributes it to the habit of constantly carrying a lance.

Some of the Tuaregs have blue eyes, and amongst the women this colour of the iris is considered a great mark of beauty. Amongst the Imohaghs no sickly persons are met. The feeble, the infirm, those subject to rickets and other constitutional ailments, are soon carried off, while by the law of "the survival of the fittest" those who remain are the better able to endure a life of hardship and resist the ravages of disease. Hence centenarians are by no means rare amongst them. The Tuaregs are doubtless indebted to their extremely temperate habits for their excellent health. Amongst other terms of reproach they heap upon the Arabs is that of being "great eaters." While on the march they themselves take one meal only during the day, and two while sojourning under the tents. Corn, dates, and figs, the berry of the *solanders persica*, some herbs, and a little meat, form their frugal fare. By traditional usage they are forbidden the use of birds or fish, the flesh of these animals being reserved for the exclusive enjoyment of the marabuts. Their most ordinary complaints are rheumatic affections and ophthalmia, disorders easily explained by the habit of sleeping on the sands during the night, and by their constant exposure to the action of the solar rays reflected from the dunes. Amongst the populations of the desert, the features connected with the organ of vision differ from those characteristic of the inhabitants of the oases. Extremely dense eyebrows overshadow the ball of the eye, which is small and deeply sunk in the socket, with very long lashes, a whitish circle separating the cornea from the sclerotic. The whole presents a slightly reddish tint, due to the suffused state of the blood-vessels.

In order to protect the sight from the glare of the solar rays, and at the same time guard against the dust constantly rising from the sands, the Tuaregs have

the habit of veiling the face. The custom has at last become a sort of religious rite amongst the men, who do not lay aside the veil even during the night. The reason they give for this custom is that the mouth, the organ through which nourishment is received into the body, should be concealed. Like the Tibbus and most of the other Saharian peoples, they have from time immemorial been designated by their Arab neighbours as the Ahl-el-Litsam, or "Veiled People." The nobles and wealthy classes usually wear a black veil, while those of the lower castes, amongst whom Negro blood sometimes prevails, have made choice of white. Thus in the eyes of the Arabs the nation is divided into two classes, the "Blacks" and the "Whites," and this distinction is precisely the reverse of that which would have to be made if based on the natural colour of the skin. The women never veil the face, except as a mark of respect in the presence of strangers.

Like the Arabs, the northern Tuaregs shave the hair, retaining from the forehead to the nape a sort of crest, which helps to support the veil at a sufficient height to allow the air free circulation round the head. When old enough to carry arms, the men begin to wear a bracelet of green serpentine on the right arm, in order, as they say, to give greater power to the biceps in dealing a blow with the sword. The Targui also never lay aside the long dagger, which is fixed by a leathern strap to the left fore-arm. The usual weapons are the lance and the sword, although they now also make use of the rifle, stigmatised as the "weapon of treason."

The face is never tattooed, but hands, arms, and countenance are dyed blue by means of powdered indigo. The rest of the body is clothed in the same colour by the blue cotton blouse and breeches, a costume very much like that of the ancient Gauls. The women in their turn paint themselves yellow with ochre. Thus, although naturally white, the Tuareg men seem to be of a blue and the women of a yellow colour. No one washes, water being supposed to render the skin more sensitive to the sudden changes of temperature. The ablutions prescribed by the Koran are all performed in a perfunctory manner with a little sand or a pebble.

The moral character of the Tuaregs has been described perhaps in too flattering colours by Duveyrier, who naturally felt grateful for the loyal assistance afforded him by the trusty Sheikh Othman, one of the chiefs of the Ifogha tribe. On the other hand, the disastrous termination of Flatters' expedition and the horrors attending it have induced public opinion to look on all Imohaghs indiscriminately as a cruel, grasping, depraved race of cowards and traitors. But it would be unfair to involve all alike in the censure perhaps justly applied to some. It is certain that, as a nation, the Tuaregs are endowed with many high qualities. They are brave, faithful to the pledged word given to Mohammedans like themselves, tenacious of the honour of their friends. The Targui marauder, who will make a journey of ten days on his mehari camel in order to carry off the cattle from some hostile tribe, will refrain from touching any deposits made by caravans along the trade routes. The debtor and his heirs never forget their obligations, just as the injured persons and their children never neglect to avenge the outrage.

The traditions of the matriarchal state are still preserved amongst the northern Tuaregs. According to the unwritten code called by the Arabs the Beni-Ummis,

or law of the "Mother's Son," the eldest son of the eldest daughter is always privileged in the transmission of property. At the death of a family chief, whether noble, marabut, tributary, or serf, his effects are divided into two parts, the "property of justice," acquired by labour, and the "property of injustice," obtained by armed force. The former is equally distributed amongst all the children without distinction of age or sex; the latter reverts entirely to the eldest son of the eldest daughter. By this ingenious arrangement the power of the great feudal families is safeguarded.

When a conquered territory has to be distributed amongst the tribes, it is assigned to the "dowager ladies" of the nobility. Such is the traditional law, which appears to have been followed by all the Sanheja communities in North Africa before the Mohammedan conquest, and which has also been preserved by several other Berber peoples, as well as by the Tuaregs. Amongst the Imohaghs the child always follows in the maternal line, their traditional law being inspired by the sentiment embodied in the familiar saying, "It is a wise child that knows its own father." The son of an enslaved father and mother of noble rank is noble; the son of a noble father and female slave is a slave.

In other respects in the ordinary social relations, the woman is man's equal, and in many cases his superior. She disposes of her own hand, the parents intervening only to prevent misalliances. She administers her personal fortune without being called upon to contribute to the household expenses, hence is generally more wealthy than her husband; she brings up and controls the children; in all festive gatherings the place of honour is ceded to her, and at table for her are reserved the choice pieces. But custom forbids her to take tea or coffee, delicacies set apart for the men. She is often admitted to the discussions of the tribal council, and at times even exercises the functions of sheikh, in this position enjoying double honours as chief and wife.

In spite of the Koran, the Tuareg women have set their faces against polygamy, and no instance has been recorded of a noble or warrior who has ventured to take a second wife. Divorce is permitted, but the new bride will never cross the husband's threshold until the fate of the repudiated wife has been formally disposed of. Premature marriages, such as prevail amongst the Arabs, are unknown, and when the Targui woman takes to herself a husband, usually at about the age of twenty, she fully knows her own mind and knows how to make her rights be respected. Like her husband, she may mount the mehari and journey across the desert to visit kindred and friends, without being called upon to account for her movements to anyone. But she rarely abuses this absolute freedom of action; for according to Duveyrier's expression, the Targui woman, "very tenacious of her rights, is equally mindful of her duties." Nevertheless, infanticide, consequent upon illicit intercourse, would appear to be by no means an unknown crime in the neighbourhood of Rhât. Nor are the Tuareg ladies at all prohibited by custom from having, like the châtelaines of mediæval times, devoted admirers of the opposite sex, in whose honour they embroider veils or compose ditties. At the entertainments they give of an evening, singing and accompanying themselves on

the tobol or drum, and rebaza, a kind of fiddle, they reserve a place of honour for those they wish to favour, and in this matter no one will ever venture to question their choice. The Imanan women, distinguished by the title of "Royal," are the most noted throughout the Tuareg country for their musical talent and poetic elegance of their improvisations. Hence the men, arrayed in their finest bravery, are attracted from far and wide to the entertainments given by these dames. Next to warfare, the Tuaregs know no greater pleasure than that derived from their musical feasts. When vanquished in battle, the last insult hurled at them is that they will no longer be welcomed by the songs of their women.

Besides cultivating the national poetry and music, the Tuareg women have also preserved the treasure of science. Amongst the Asjars nearly all can read and write, while scarcely one-third of the male population have acquired these rudimentary accomplishments. To the women belongs also the task of giving instruction in grammar, language, and the national Tefinagh characters, which differ little from those found inscribed on the Thugga stone, a monument as old as the Carthaginian epoch. Nearly always travelling at night, the men are perfectly familiar with the form and motions of the heavenly bodies. They are also past masters in the subject of local topography; but beyond these branches of knowledge they know little, and leave all other studies to the women.

When Duveyrier brought Hanoteau's *Temashek Grammar* into the country, a perfect ferment was created in the feminine world. All the ladies were eager to see, handle, and study this marvellous work, which glorified their language, and moreover contained collections of fables, poetry, and histories, with some of which they were unacquainted. This grammar, with some other works of the same class, and fragments of the Bible published in London, constitute at present the whole body of Temahag literature. The Berber translation of the Koran which was formerly completed in Morocco, is stated by Ibn-Khaldun to have been destroyed in order to prevent the word of Allah from being subjected to human criticism and interpretations. All the writings possessed by the Tuaregs are in Arabic, in which language all correspondence is carried on, and all spells and incantations composed.

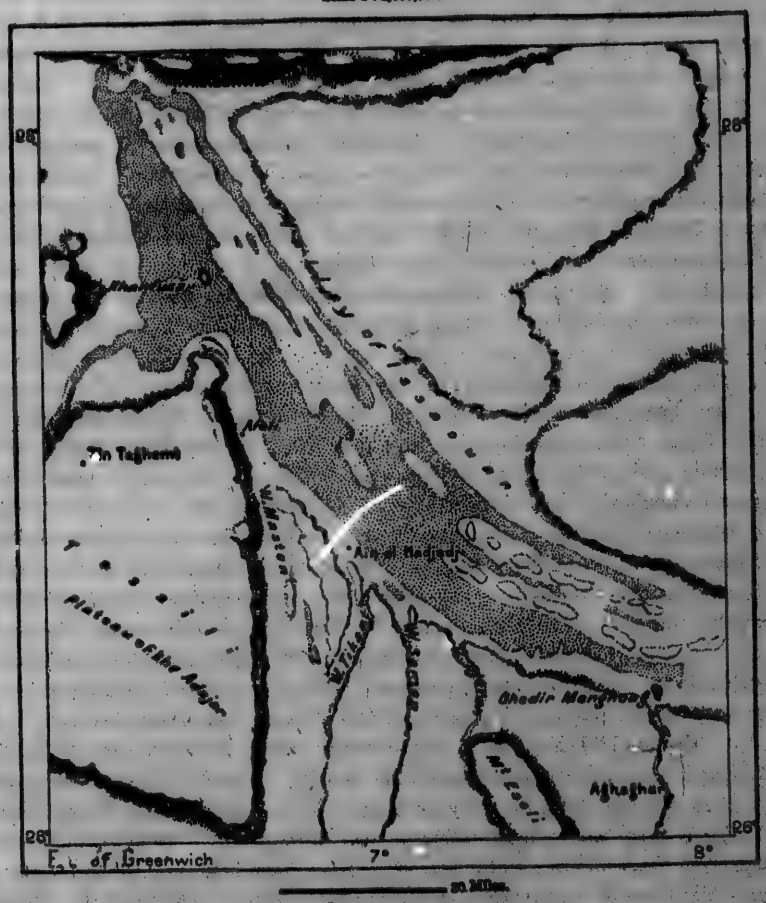
Like the kindred Kabyles of the Jurjura highlands, the Imohaghs of the Tassili and Ahaggar countries show little zeal for the Mohammedan faith. The duty of prayer they leave to the marabuts, and few amongst them are ever found who practise the least religious observance. But, on the other hand, many rites dating from times anterior to the spread of Islam have held their ground amongst them. The cross is in the eyes of the Imohaghs a sacred emblem, and the celestial beings are still called *angelds* by them.

The Targui entertains great fear of ghosts and spirits. He is careful not to weep for the dead, lest his tears may bring them back to life. After the interment, the tents are struck and the encampment changed, in order to put as much space as possible between the living and the dead. The father's name is not given to the son, as it is by the Arabs, but dies with the man who bore it. The marabuts alone, who have been assimilated in religion to the Arabs, have adopted their practice in this respect. But their silent and unconscious influence, as might be

expected, is naturally tending to spread Arab ideas and usages amongst the Tuareg populations. When the marabuts are appealed to as judges or umpires, their decisions are framed in conformity with Koranic principles; but the internal administration of the tribes and families is organised exclusively according to

Fig. 199.—Issawan Valley.

Scale 1 : 2,000,000.




the national traditions. The sentences pronounced by the sheikhs are usually fines and the bastinado, imprisonment and capital punishment never being legally imposed. In cases of personal injury, the duty of blood vengeance devolves on the outraged party.

## The Twat Oases.

Twat, properly so called, is merely a narrow plain skirting the east side of the Saura (Messaura, Messaud) river valley above the point where this stream is lost

in the sands or mountain gorges. But in ordinary language, the term Twat, which in Berber means "the Oases," is applied collectively to all the palm groves scattered over the desert between the Tuareg country and the region of the great western dunes. The Gurara district, round the north side of which these sandhills develop a vast amphitheatre, thus forms part of Twat, as does also the strip of land supplied with moisture by the underground waters of the Saura between Karma and Taurirt. Lastly, the Tidikelt oases, constituting the most extensive group of cultivated territory in the whole region, is included in the same country of Twat.

It may be stated in a general way that Twat comprises the whole region of Quaternary alluvia which sweeps in crescent form round the west and south sides of the extensive cretaceous Tademait plateau. Its natural limits on the north side are formed by the dunes of the Western Erg; on the west, beyond the Wed Saura, by the Iguidi sands; on the south by the Devonian plateau of Muidir. The plains thus limited are, however, divided into isolated cultivable tracts by intervening stony hamadas and ranges of sandhills.

## Exploration of Twat.

The commercial relations are so frequent between Mauritania and Twat, the natural centre of trade of the western Sahara, that the fullest details regarding this region have easily been obtained through the reports of the native traders. But hitherto very few European travellers have penetrated to these isolated Mussulman communities. Under the escort of the Ifogha Sheikh Othman, Laing visited Twat in the year 1826, at a time when its inhabitants had not yet any grounds for fearing that their territory might possibly be occupied by any European Power. In 1861 the French officers Colonieu and Burin, while traversing the zone of great dunes south of the province of O[illegible], entered the Gurara district. But all farther advance in this direction was barred, and they were compelled to retrace their steps northwards without accomplishing their mission.

Gerhard Rohlfs was somewhat more successful, having managed in 1864 to spend over a month in the Twat oases, disguised, however, as a Mussulman, and envoy of the Sherif of Wessan. He had also taken the precaution of giving himself an illustrious genealogy, tracing his descent back to the royal race of the Abassides. The faithful accordingly assembled to kiss the hem of his garment, and spread abroad the fame of his miraculous cures. He was even reported to have restored their sight to the blind. Ten years afterwards, M. Soleillet, coming from the north, also presented himself before Insalah; but being neither one of the Abassides, nor yet a follower of the Prophet, he sought in vain for permission to enter the oases, and was fain to return with his four companions to El-Golea. Three Roman Catholic missionaries, who followed the same route in the year 1876, were murdered on the way, before getting so far as Twat.

Apart from the hostility of the natives, the route itself presents but few physical difficulties. From El-Golea to Timimun in the Gurara district the traveller need but follow the beaten track between the region of great dunes and the western

escarpment of the cretaceous plateau, along the depression of the Wed Meguiden, occupied by the Quaternary alluvia of the Saharian formations. Even along the direct route across the plateaux from El-Golea to Tidikelt he meets wells, plantations, and pasturages at stated intervals. No dunes occur on the first day's march south of El-Golea, except for a short distance of 2½ miles; [illegible] tracks across the hamadas and other wastes destitute of vegetation are all carefully indicated by a regular system of landmarks. For a great part of the way, the Mejebel, that is, the main caravan routes, are kept clear of stones and other obstructions for a normal width of from 20 to 30 feet. All the pebbles, shingle, and boulders that formerly strewed the ground have been carefully removed and disposed in rough walls right and left of the highway. This great work, which must have required a vast amount of labour, dates from an unknown epoch. By the Shaanba tribe it is attributed to a mythical being named Ben Buur, who is supposed to have flourished at a time when Twat was still uninhabited.

### Flora, Fauna, and Inhabitants of Twat.

The products of Twat differ in no respect from those of the other districts in the Central Sahara lying at the same altitude and under the same climatic conditions. In all these cases, as in those of Morocco and Eastern Mauritania, the date-palm is the characteristic plant; but with the exception of a few choice varieties, it yields a fruit of inferior quality to that of the Sûf and Tafilelt districts. But although the palms of Twat are generally of small size, the wood is better and more durable than that of the western plantations. In the shade of their tufted foliage the natives cultivate wheat, barley, and beahna, the latter yielding two crops in the year. In the orchards are also grown pomegranates and some grapes, but in small quantity, these fruits being generally dried up by the sun before arriving at maturity.

The inhabitants of Twat also raise various kinds of vegetables in their well-watered gardens. But the yearly produce is insufficient for the local wants, so that the natives have to supplement their stores with supplies of various kinds from the Algerian agricultural districts. A part of the land is also reserved for the cultivation of industrial plants, such as cotton, henna (*Lawsonia inermis*), and korunka (*calotropis procera*), a shrub, the wood of which supplies the charcoal employed in the manufacture of gunpowder. Opium, which the natives of Twat smoke with avidity, is cultivated especially in the northern districts, while tobacco is one of the chief products in those of the south.

The domestic animals are the same as in the other oases, but less numerous. In Twat the camel is man's chief associate, both as a pack-animal and for riding. Horses, fed like the asses, on damaged dates, are very rare, while horned cattle are completely absent. The sheep, covered like the goats with a coat of hair, resemble those of Tibesti, and full-grown poultry are no bigger than the chickens of Western Europe.

According to Rohlfs, the first inhabitants of Twat would appear to have been

the Tuaregs, as is still attested by the names of the different species of dates, which are all in the Temahag language. Like the highlanders of the Aures and Ahaggar regions, these Tuaregs had been brought under the influence of Roman and Byzantine civilisation, judging at least from the local names of the months, which are all the same as those of the Latin calendar. In Twat there are, moreover, still found some Tuareg communities of pure stock, speaking the national Berber language exclusively, and dwelling in palm huts or under the tent.

Even among the natives who call themselves Arabs, some are undoubtedly Berbers. Such are the Kel-Mellels, who are settled in Insalah, and who through a sentiment of vanity claim to be descended from the family of the Prophet. Other Berbers, who like most of those living in Morocco belong to the Shluh branch of the race, constitute the substratum of the population in the various oases, and still speak a dialect differing little from the Berber language current throughout Western Mauritania.

The Arabs also are represented in Twat by various marabut and other tribes. But Arabs and Berbers have all alike a strong strain of Negro blood. Few persons are met with fair or even swarthy complexion, nearly all being very dark or black, with broad features, but pleasant smile and soft expression. The women, who do not go veiled, like their Mussulman sisters in the Tell districts, are very graceful and converse freely with the men.

The people of Twat have the kindly disposition of the Negro, and are generally esteemed for their commercial probity, respect for strangers, love of peace, and other good qualities of the heart. But they are fanatics of an extremely narrow type, their religious zeal exceeding that of all other Mohammedan populations in North Africa. Notwithstanding the poverty of the country, as much as £2,000 is said to be yearly collected as pious offerings for the emissaries of the Sherif of Wezzan, besides considerable sums contributed to other marabuts for religious purposes. The Senûsiya order has recently established settlements in several of the Twat oases. This region is, on the other hand, closed for the present to the French, not only on political grounds, but also because they belong to the hated Christian sect.

## The Gurara and Timimun Oasis.

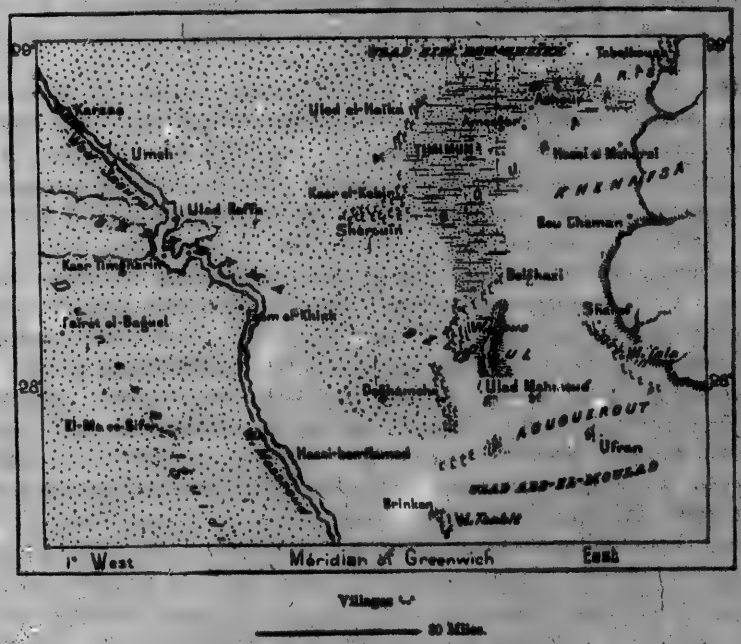
*Gurara*, in Berber Tigurarin or Tijurarin, comprises the northern division of Twat, consequently the district which in commercial matters depends most on the neighbouring colony of Algeria. In a geographical sense, it forms even a direct southern extension of that region, for the waters of its oases are derived by underground channels from the Geryville uplands. The various rivers flowing in the direction of the desert, such as the Wed-en-Namus, the Wed-el-Gharbi, the Wed Seggwer, the Wed Zergun, and all the intermediate affluents, disappear beneath the sands of the Erg desert; but the streams continue to flow in subterranean beds, again coming to the surface south of that region of shifting dunes. The gazelle-hunters and Shaamba marauders, studying the direction taken by these river valleys,

have discovered at intervals certain feij, or cavities, corresponding with the underground passage of the waters.

The overflow of moisture comes up in an extensive sebkha, or saline depression, which takes the form of a crescent in a southern gulf of the sea of sands. At times travellers find some difficulty in traversing this saline plain, owing to the soft or boggy nature of the ground. Round about the sebkha, which stretches north and south for a distance of some 60 miles, are disposed the oases and erected the fortified ksurs, to the number of about eighty. They appear to have been formerly even still more numerous, for here and there are met the vestiges of ruined villages in

Fig. 200.—Gurara and Wed Saura.

Scale 1 : 2,000,000.




the midst of now-abandoned plantations, which still yield a few dates without artificial irrigation.

The inhabitants of Gurara, a name by which is more specially understood the district lying north and east of the sebkha, belong for the most part to the Zenata branch of the Berber race. The Meharza tribe, however, which occupies the northern oasis of Tin-er-Kûk, is of Arab descent, and families of the Ulâd Sidi Sheikh confederacy frequently pitch their tents in this oasis round about the palm groves of the town of *Tabelkuza*.

In the Sherwin oasis, which lies west of the sebkha, the population, noted for its valour, is also to a large extent Arab. The whole group of oases encircling the

depression contains altogether several million palm-trees, over eight hundred thousand being comprised in the seven ksurs of *Deldul*, or *Deldun*, which belong to the Zwa tribe. South of the sebkha the road runs almost uninterruptedly beneath the shade of the overhanging foliage for a distance of 9 or 10 miles.

The gardens of Gurara are not watered by waters flowing on the surface, but by fogarats (feggaguir), that is to say, galleries tapped at intervals by wells analogous to those of Persia and Afghanistan. To the numerous sebkhas scattered over the plain round the margin of the principal depression, are probably mainly due the much dreaded fevers which prevail in the oases during the summer months. These marsh fevers, unknown in the rest of the Twat country, are by the natives called *ikhrud*, or "exterminating malady."

The chief oasis skirting the east side of the great sebkha is that of *Timimun*. Here stands, surrounded by crenellated walls, the most populous town in Gurara, and even in the whole region. It is usually regarded as the capital of Twat, and the resident sheikh is one of the most powerful persons in the country. A neighbouring convent belonging to the Tijaniya order also enjoys considerable influence over the surrounding populations. Timimun is one of the three great marts of Twat, and is more frequented than any other by caravans from Algeria. Nevertheless this town does not appear destined to lie on the route of the future Transsaharian railway. The sandy waste which stretches to the north of the Gurara oases obliges travellers to make a détour, either to the east through El-Goles, or to the west through Beni-Abbas, Karsas and the valley of the Wed Saura.

*Beni-Abbas*, an important centre of the caravan trade, is the first oasis of the Wed Saura below Igli and the confluence of the upper tributaries. The village, which has a permanent population of six hundred souls, is almost buried amid the surrounding dunes. Nowhere else in the whole Mussulman world can a more striking example be found of the power of the religious confraternities. Five different orders are here represented, all claiming and receiving contributions from the faithful.

One of these orders has its mother-house at *Karsas*, some 60 miles farther down. Situated on the left bank of the Wed Saura, in the narrow valley formed by this watercourse between the two sandy wastes of Erg to the east and the Iguidi dunes to the west, Karsas constitutes, like Beni-Abbas, an indispensable station for travellers and caravans descending from the higher valleys of the upper basin in Morocco and Algeria, or returning northwards from the lower Twat oases. Thus lying on the great highway of the desert, Karsas would be exposed to attacks from every quarter, had it not been created a sort of neutral town by the unanimous consent of the surrounding populations. Being incapable of defence it is never attacked by anyone. Encircled by no walls, it welcomes as guests all presenting themselves at the convent gates, few of whom, however, arrive empty-handed.

The marabuts of Karsas not only enjoy the revenues derived from their plantations, which develop a vast garden along the Wed Saura, and which yield dates of excellent quality, including one variety found nowhere else, but they also keep

large herds, which graze freely on the surrounding steppes and dunes, the animals marked as the property of the order being respected by all. The confraternity also derives large profits from trade, its members being the chief agents in maintaining the commercial relations between Algeria and Twat. Nearly all the Karsas marabuts marry before the age of fifteen. The direction of the community is not a hereditary office, as in all other monastic establishments. The dignity is not transmitted from father to son, but passes by right to the *doyen*, or oldest member of the establishment.

### Ulad-Raffa, Tsabit, and Tamentit.

Amongst the centres of population which follow in succession beyond Karsas in the Saura basin, one of the most important is *Ulad-Raffa*, which is quite as populous as the marabut town. It is inhabited by a branch of the Ghenenma, or GhenAnema tribe, the Rinema of Rohlfs, a Musulman community noted for its indifferent observance of the prescribed rites. The Rhamadan fast is kept by them not in their own persons, but by proxy, the custom being to hire substitutes willing to mortify the flesh on their behalf for a consideration. Most of them are wretchedly poor, largely supporting themselves by plunder, for nearly all the cultivated tracts in this valley are in the hands of a few opulent owners. The absorption of the land in great domains is the curse of these oases, as of so many more civilised regions.

The area of arable land might here be greatly enlarged, for although little water is visible in the channel of the Saura, the central parts are at least always moist, and the underground reservoirs might easily be tapped by sinking wells a few feet deep along its bed. Even below Ulad-Raffa, the sandstone hills hemming in the stream, and whose base forms a sort of barrage, drive the water to the surface. In this defile, says Fum-el-Khink, are situated some gueltas, or permanent meres, always flooded with a fluid, which although somewhat brackish is nevertheless drinkable.

South of the gorge some fogarets, fed by the subterranean waters, have been successfully sunk in several places, and vast marshy tracts occupy the depressions between the sand-hills lying to the west of the Wed Saura. One of these sebkhas is commanded by the fortress of *El-Ugwarta*, peopled by branches of the Berabber and Zenata tribes. Farther west, about midway between Wed Saura and Tafilelt, another sebkha is skirted by an oasis containing five or six thousand palms, dotted with the hamlets of *Tabelbelt*.

South of the great Gurara sebkha, the oases are grouped more closely together between the western escarpments of the plateau and course of the Wed Saura, which here takes the name of Messaud. Here the Augwerut (Wagwerut, Ugwerut) oasis, inhabited by the Kenafra and the Ulad Abd-el-Mulat tribes, stretches for about 18 miles along the foot of a range of heights pierced with underground galleries and wells. The chief town comprises two distinct quarters, *Sherif* and the ksawya of *Sidi Aomar*.

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The Tsabit oasis, although less extensive, enjoys greater commercial and strategic importance, thanks to its situation on the great caravan route. *Brinken*, its capital, is still one of the most populous towns in Twat, although in the year 1848, during a civil war between the oases it lost half of its inhabitants and palm groves.

Towards the south follow in succession the oases of Sba, Buda, and Timmi. At the time of Rohlfs' visit, the group of twenty hamlets constituting Timmi was the most flourishing in the whole of Twat. *Adrar*, its capital, which possesses a permanent market, enjoys this advantage in common with Timimun in the Gurara district, and the town of *Tamentit*, which lies 6 miles farther south, at the farther side of a saline depression where no water is ever collected.

Tamentit, the largest town in Twat, forms an independent republic, administered by a jemâa, or assembly of notables, and a sheikh. The population is not only Musulman, but mainly composed of a Taibiya confraternity, which sends its offerings regularly to the Sherif of Wezzan in Morocco. Nevertheless, the inhabitants of Tamentit are of Jewish descent, like those of several other districts in Twat. Forcibly converted into fierce Mohammedan fanatics, and almost assimilated to the Negro type by the intermixture of races, they have at least preserved their Hebrew origin, the characteristic qualities of tact in the administration of affairs, and much skill in the exercise of all the industries. Their jewellers, armourers, locksmiths, boot and shoe makers, and tailors, have opened workshops in the bazaar, and the quality of their ware yields in no respect to that of their brethren in the large towns of Algeria and Morocco.

## Tillulin—Tidikelt—Insalah.

In the courtyard of the citadel at Tamentit the natives show with pride a "stone fallen from heaven," a black polished block, which is probably a meteorite. According to the local tradition, it was formerly a mass of solid silver, but was afterwards changed to iron, doubtless in consequence of the depravity of mankind.

South of Tamentit, where the oases take the name of Twat in a more special sense, the plantations are grouped under the general denominations of Blad Sali and Blad Reggan. They are continued southwards along the course of the Wed Messaud as far as *Tillulin* and *Tasrirt*, at the confluence of another wed descending from the eastern plateaux. This district is one of the most densely inhabited in the whole region of palm groves. But farther on all cultivation gives place to the desert, in the midst of which the river disappears, either absorbed in a saline depression, as Rohlfs was assured by the natives of Twat, or else in a gorge through which it effects a junction with the Teyhasert, another stream flowing from the southern slopes of the Ahaggar highlands.

According to MM. Pouyanne and Sabatier, who have collected reports from a large number of the inhabitants, this watercourse, interrupted only by a range of sandhills which may be traversed in less than two hours, would appear to belong to the fluvial basin of the Niger, its confluence with that river being through a succession of marshy depressions alternately dry and flooded. But in this direc-

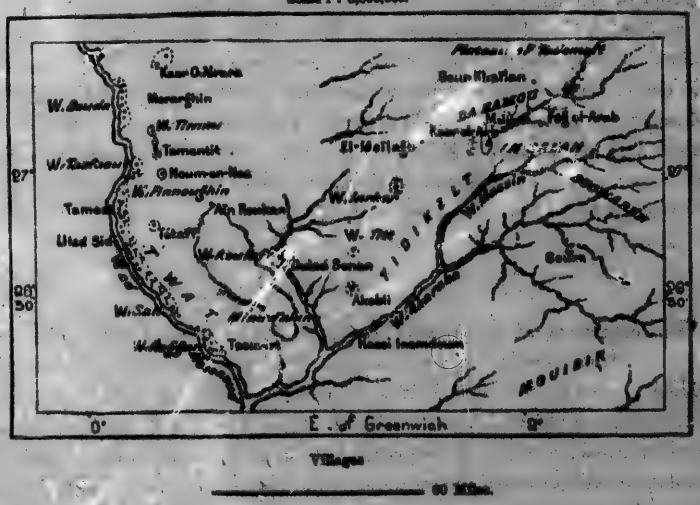
tion there are no more human habitations, nothing being met except at long intervals the camping-grounds of the Tuareg nomads. Such are *Insiar*, *Timissau* and some other places, where a little water can be had.

The groups of oases, however, begin again east of the Twat district properly so called, beyond an intervening stony tract about 7 miles broad. Here are grouped the settlements of *Tidikelt*, *Aulaf*, *Titt*, and *Akobli*, the last-named noted throughout the whole of the Sahara as a market for black slaves, and as a general rendezvous for travellers and caravans proceeding southwards to the Sudan. In the neighbourhood are some alum mines, worked by the natives.

In this district the most important palm groves are those of *Insalah* (the Ain-Salah, or "Fountain of Peace" of the Arabs), which lie in the northern part of the Tidikelt oasis. Here several villages follow from north to south along the

Fig. 201.—Twat and Tidikelt.

Scale 1 : 8,000,000.




margin of a sebkha at the foot of a range of sandhills, which skirts the east side of the salina. An underground channel tapped by wells, in which is collected the water oozing through the sands, yields a sufficient supply for the plantations. The area of cultivated land has even recently been greatly extended at the expense of the sebkha and of some unproductive thickets of shrubs.

In Twat, as in the rest of the Sahara, the land belongs to whoever sinks a well, keeps it in repair, and "quickens" the soil. But works of this sort can be undertaken only by the whole tribe acting in concert, or by the more powerful chiefs, who can employ forced or voluntary labour. In the Insalah oasis the system of great domains generally prevails. The sheikh and other members of his family own severally many thousands of palms, and surround themselves with hundreds of retainers, who eat their bread and champion their cause. In Twat, however, there

are also some small holdings, which are highly cultivated, and as thriftily administered as the arable lands in the Yang-tse-Kiang valley.

In the northern part of the Insalah oasis is situated the village of *Melians* or *Milians*, to which M. Soleillet penetrated in the year 1873. But the chief centre of population, Kasr-el-Arab, or Kesr-el-Arb, lies farther south. Here resides the sheikh, a very potent personage, thanks to his great wealth, to the heroic traditions of the Bujuda family, of which he is the representative, to the patronage he is able to exercise over the neighbouring Tuareg tribes, and to the protection he affords to passing caravans.

## Air, and Country of the Awellimiden Berbers.

In the centre of the region stretching from the Tibesti highlands westwards to the great bend of the Niger, rise the uplands of Air (in Arabic Ahir*), surrounded on all sides by sandy wastes and rocky plateaux, and forming a distinct orographic system, with its main axis disposed in the direction from north to south. This rugged region, the Asben or Abeen of the Negroes and undoubtedly the Ageimba of Ptolemy, has hitherto been visited only by one European expedition, that conducted by Richardson, Barth, and Overweg in the year 1850. These explorers, advancing southwards from Rhât, had crossed the central crest of the Sahara by the jagged Azjar plateau and the gorge of Egueri. Then leaving the region of sandstone formations, they entered that of the granites, taking a south-westerly and southern direction in order to reach the wells of Asiu, one of the most important watering-places in the desert. Here converge all the main routes from Ghadames, Tibesti, Twat, and Agades. On the level plain are sunk four wells, yielding an abundant supply of water, but ferruginous and of a disagreeable flavour. Two of these wells belong to the Azjar Tuaregs, while the two others are regarded as the property of the natives of Air. According to an intertribal convention, which, however, is no longer observed, the respective owners of the waters are bound to refrain from all acts of hostility beyond the limits of their own territories. It was south of the line of demarcation, consequently in the Air domain, that Barth and his fellow-travellers, although under the protection of Mohammedan escorts, were attacked and plundered by the Azjars, in violation of the terms of this agreement.

The Air highlands cover a considerable extent of ground. From the Tidik Valley, opening to the north-west of the northern group of hills, like a moat encircling a citadel, as far as the Baghezen mountains, southern limit of the whole region, the distance in a straight line is about 120 miles. From east to west the breadth varies from 40 to 60 miles, while the superficial area of the whole system may be estimated at 6,000 square miles. Granite appears to be the prevailing formation, although Barth and his companions also noticed some sandstones, and in these highlands, as well as in those of Tibesti, some basalt rocks also occur.

Rising in the midst of the Saharian plains, which here lie at a mean elevation of from 1,600 to 2,000 feet above sea-level, the heights of Air exceed, in some of

* Air, incorrectly but designedly for the reason given by Barth, i. p. 336.—Ed.

their crests, an absolute altitude of 5,000 feet. The loftiest peak, towering in pyramidal form towards the north-western extremity of the system, is Mount Tengik or Timgé, to which Barth assigns an estimated height of from 5,500 to 6,000 feet. Towards the centre is Mount Eghellat, with an altitude of perhaps 4,400 feet; and the two terminal groups of Doghem and Baghsen attain at least the same elevation. While traversing a deep gorge along the foot of the basaltic Doghem rocks, Barth at first supposed that this mountain was even the culminating point of the whole orographic system.

In the interior and round the contour of the Air highlands there nowhere occur any upland valleys comparable to those of the European Alpine regions. They are for the most part savage gorges and ravines developing a sort of shebka, or "thread," like the beds of the torrents in the Mzab country. But these ravines, which are flushed by foaming waters after the heavy rainfalls of September and October, do not form river basins lower down. They either disappear, absorbed in the vast sandy wastes or in the surrounding hamadas, or else end abruptly in some rocky cirque, where the rain water, collected in temporary lakes, gradually evaporates.

Taken collectively, the Air uplands present the general aspect of mountain masses which the running waters have not yet cut into a regular range, with its lateral ridges, offshoots, and transverse valleys. Hence, as in Fezzan, the depressions are the only spaces available for cultivation, the intermediate cliffs presenting nothing but arid escarpments.

### Flora, Fauna, and Inhabitants of Air.

In their vegetation the Air highlands are not an exclusively Saharian region, some of the plants here flourishing already attesting the proximity of Sudan. The more fertile hollows are clothed with veritable forests, in which varieties of the mimosa family form the prevailing feature. Thickets of the dûm-palm are also common, while the grazing-grounds are sufficiently extensive to enable the inhabitants to occupy themselves with the breeding not only of camels but also of zebus, which are used both as mounts and as beasts of burden. On all the grassy heights goats browse in multitudes; but there are no sheep, and horses are extremely rare.

Most of the villages have their cluster of date-trees and their fields of millet (*pennisetum typhoideum*); but the tracts brought under cultivation are far less extensive than might be the case. While in Sudan the ground is carefully tilled with the hoe and weeded, the few natives of Air who occupy themselves with agriculture still make use of the plough. The great majority of the "Asbenava," as they are called, devote themselves to stock-breeding and to trade, relying to a great extent on the inhabitants of Sudan for the necessary supply of cereals.

The lion, which seems to have disappeared from the eastern highlands of the Sahara, is still frequently met in Asben, and occasionally even in packs. It belongs apparently to a different species from that of Senegal, being destitute of

mane, like the variety still surviving in Western India. The leopard, although less common, is more feared by the natives. Hyænas are very rare, while the jackal prowls in numerous packs round all the camping-grounds. The wild boar has its lair in the thickets, and monkeys boldly venture amid the clumps of trees in close proximity to the human habitations.

Various species of antelopes, some indigenous in Northern Sahara, some originally from Sudan, roam over the surrounding plains, and penetrate into the mountain gorges. The feathered tribe is represented only by a small number of species, but each species by myriads of individuals. Of the species the most common are the turtle-dove and guinea-fowl. Although relatively to the rest of the Sahara, the Air uplands may be said to abound in animal life, they might be almost described as a lifeless region compared with the southern zone of steppes bordering on the Sudan, and separated from Asben by the bare and arid Abadarjen plateau. These steppes, says Barth, are the true home of the giraffe, and of the beautiful long-horned leucoryx antelope; here the ostrich is met in large flocks, and the ground is burrowed in long galleries by the earth-hog (*orycteropus athiopicus*), an animal which never leaves its hole in the daytime, and is consequently rarely seen by the natives.

Like its flora and fauna, the native population of Air gives evidence of the constant struggle and crossing of species between the Sahara and Sudan. In this debatable land between the two regions, the Berber and Negro races have long contended for the supremacy. The ancient Goberawa, who are traditionally said to have been its former masters, would appear to have been black Berbers, constituting one of the aristocratic families of the Negro Hausa nation. These seem to have been followed by other conquerors of Berber origin, descending from the northern highlands. Such were the Kel-Gheres, that is to say, "People of Gheres," and the Itissan, who are classed by Ibn-Khaldun amongst the tribes of the powerful Sanheja confederation.

But all these former invaders are now ranked amongst the vanquished. Driven from the Air highlands during the first half of the present century, they withdrew in the direction of the western and south-western plains, here occupying a territory ceded to them by the Awellimiden confederacy. The Kel-Gheres and Itissan tribes are distinguished amongst the Berber peoples especially for their strength, beauty, and graceful carriage. The complexion is comparatively speaking fair, and they pride themselves on the purity of their blood. They have also a great reputation for courage, and although far less numerous than the present occupants of the Asben uplands, they enjoy the advantage of being nearly all horsemen, whereas their hereditary foes mostly employ camels in the battlefield. Warriors mounted on horses have naturally much greater freedom of action, and can manœuvre far more rapidly than those using the clumsy "ship of the desert."

The present rulers of Air, or Asben, called Asbenawa (Asbenawa) by the Sudanese peoples, give themselves the designation of Kel-Owi, that is, "Men of Owi," from a place supposed to be the cradle of their race, but the site of which has not yet been determined by the historian. They are undoubtedly of Berber origin,

and their home lies somewhere to the north of Air. They even form part of the famous Auràghen nation, and might almost claim to be "Africans" in a pre-eminent sense, if it be true, as many learned authorities suppose, that the name of the continent has been taken from these Auràghen, or Aurighas.*

But, however this be, the Auràghen are not of pure Berber stock. According to the local tradition, the Kel-Owi undertook at the time of the conquest, about the year 1740, to spare the lives of the black natives; an alliance was even contracted with them, the Berber chief engaging for himself and his posterity that the head of the new dynasty should always marry a black wife. Most of his followers did the same, and at present the Kel-Owi, while remaining Awellimiden, or "veiled," like the other Tuaregs, have for the most part a very dark complexion. In their features also, as well as in their moral qualities, they betray a marked resemblance to the Haussa Negroes of Sudan. Like them they are of a bright cheerful disposition, kind and friendly to strangers. The race of slaves has mingled with that of freemen, say the Tuaregs, who have preserved the purity of their blood, and who give to the Kel-Owi the opprobrious name of Ikelan, or "Slaves."

The Auraghiye, or old Berber language, spoken by them, has also been corrupted by a mixture of Haussa words and expressions, and most of the Kel-Owi even speak both languages. Some amongst these Berbers have even forgotten altogether their mother-tongue. Such are the people of Agades, in the region south-west from Air, who are comprised within the zone of Songhai (Sonhrai) speech, the Negro language current in Timbuktu.

On the other hand, the old matriarchal customs have been preserved amongst the Kel-Owi Berbers. In Asben the husband does not lead the bride to his home, but follows her to that of her parents. Property also and power are transmitted not from father to son, but in the female line from the uncle to the sister's son. Analogous customs are retained amongst some other Berber tribes, as well as amongst the Negro populations of Sudan.

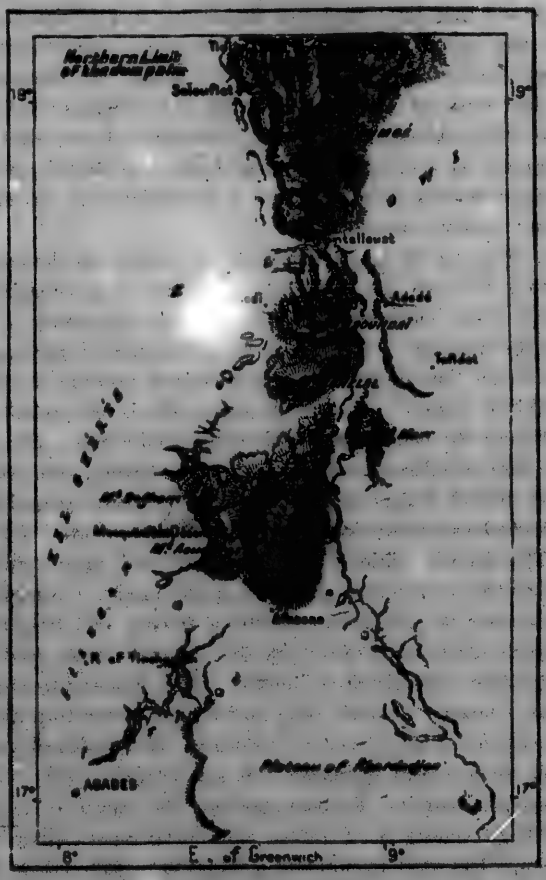
### Topography of Air.

*Seluflat* and *Tintaghoda*, the two northern villages of Air, inhabited by marabuts, are mere collections of hovels covered with the foliage of the dûm-palm, which has here its northern limit. Although the residence of a secondary amanokal, *Tintellust* is little better in appearance. It lies at an altitude of 1,920 feet on a wed by which the Timge mountains are completely separated from the southern Boundai group. In the neighbourhood dwell the noblest families of the Kel-Owi nation. The Tintellust valley is described by Barth as a broad sandy channel, bare of herbage and only lined with bushes along its border. At the time of his visit it was the residence of the powerful chief Annur, and a little farther south stands the sandhill selected as the camping-ground of the English expedition. Doubtless this sandhill will ever be memorable in the annals of the Asbenawa as the "English Hill," or the "Hill of the Christians." †

* Carette, "Origine et Migration des principales tribus de l'Afrique."
† Barth, "Travels," i. p. 34.

Tintellust is surpassed in population by two other places in Air: to the south-east *Tafidet*, a group of three villages, one of which is the residence of a prince enjoying a high reputation for sanctity; and to the south-west *Assodi*, which is said to have been formerly a very large town, containing about a thousand houses and seven mosques. At present scarcely more than eighty of its houses are inhabited.

Fig. 202.—Air.
Scale 1: 2,000,000.



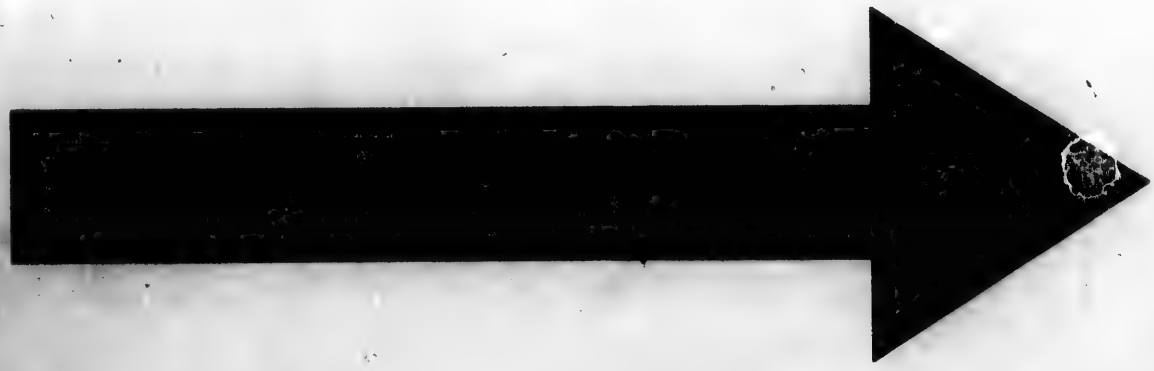

South of this place the caravan route passes the imposing Mount Teherets, whose steep slopes terminate in a double cone. The route then skirts the west side of the lofty Dogheem escarpments, beyond which it penetrates into the beautiful Auderas valley, probably the most southern place in Central Africa where the plough is used. Here Barth saw three slaves yoked to a plough and driven like

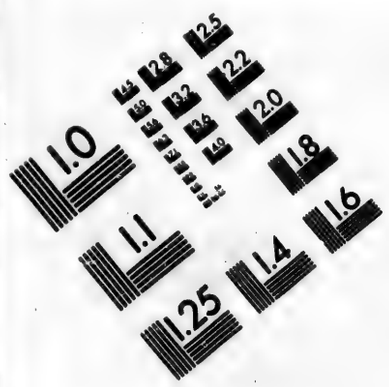
oxen by their master. To the north of the gorge leading from the valley, a gloomy cirque of rocks is occupied by a famous *maid*, or place of prayer, a pre-eminently holy spot, founded to commemorate the conversion of the pagan Hausas people to the faith of Islam. The sacred enclosure consists of stones regularly disposed round a space about 65 feet long, within which a shady acacia marks the place where the imaum raises his hand in prayer. No good Musulman coming from the north ever neglects to offer his thanks to Allah when passing by this maid or makam, which is known throughout the Sahara under the name of *makam esh-Sheikh ben Abd el Kerim*, the "Shrine of Sheikh ben Abd the Gracious."

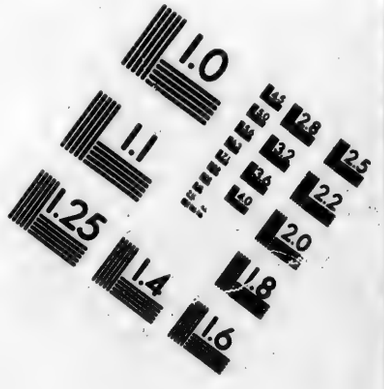
Formerly the capital of Asben was *Tinshaman*, a city of learned men and merchants, now mentioned only as a village in ruins. Its trade and population have been shifted some 24 miles farther south, to the famous town of *Agades*, the most populous in the whole of the Sahara. According to the local tradition, this place had formerly as many inhabitants as Tunis, and Barth's careful measurements have shown that the superficial area of the ancient city was large enough to contain as many as fifty thousand souls.

The epoch of the great prosperity of Agades was about the beginning of the sixteenth century, at which time it was the chief mart of the Saharian border zone, trading directly with Timbuktu and all the principal towns of the Sudan. Destroyed by the Tuaregs at the end of the last century, it has again risen from its ruins, and at the time of Barth's visit contained from six hundred to seven hundred inhabited houses. The total population is at present about seven thousand, including the family chiefs and traders, and others visiting the place on business. Foreign merchants are also settled at Agades, especially natives of Twat, the most skilful dealers in the Sahara. They are engaged exclusively in the retail trade, and as brokers in connection with the importation of cereals from the Sudan. The diverse origin of its inhabitants and their varied commercial relations with all the surrounding lands have made Agades a polyglot city, where are currently spoken the Tarighiye (Berber), Hausas, and Songhai languages. Arabic is scarcely understood, except by the lettered classes, who form here a numerous corporation. Nearly three hundred children attend the mosques, where their instruction is mainly confined to the recitation of verses from the Koran.

Agades lies at an altitude of about 25,000 feet, on the edge of a sandstone and granite plateau, whose waters, springing from great depths, yield a certain quantity of salt. In several quarters the town presents the aspect of a heap of ruins, mounds consisting exclusively of refuse and débris surrounding many of the inhabited houses. The only remarkable monument in the place is the "Tower," pre-eminently so-called, about 95 feet high, and serving the double purpose of a minaret and a watch-tower. The shaft bulges out towards the centre, like the trunk of a deleb palm-tree, and gradually tapers towards the summit, where it is not more than about 8 feet in width. Like most of the houses in Agades, it is built entirely of clay, and in order to strengthen a building so lofty and of so soft a material, its four walls are united by thirteen layers of boards of the dûm-tree, crossing the whole tower in its entire length and width, and projecting on each



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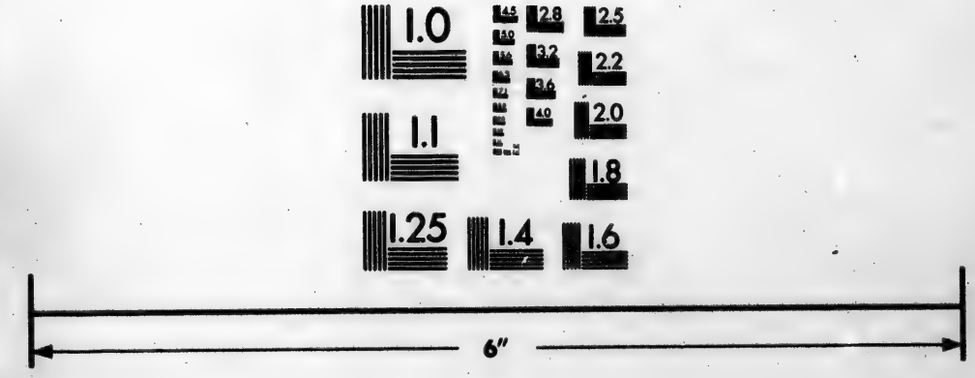

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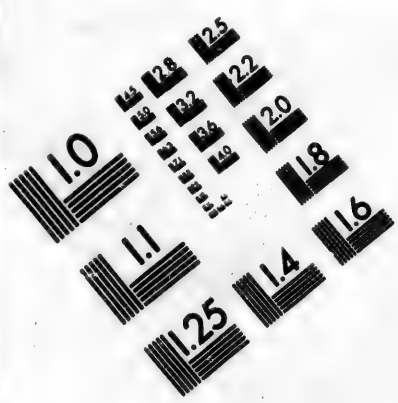


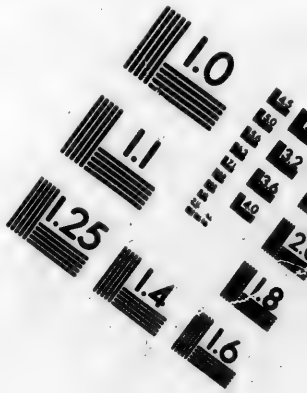


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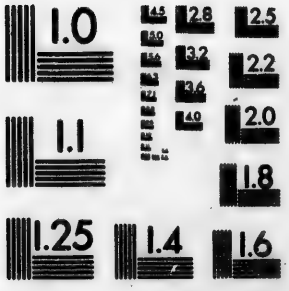


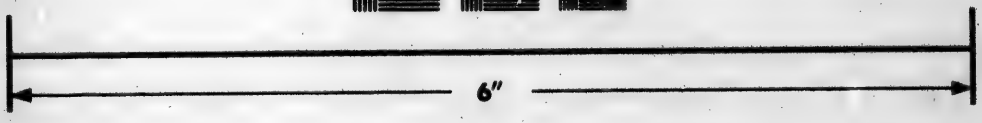


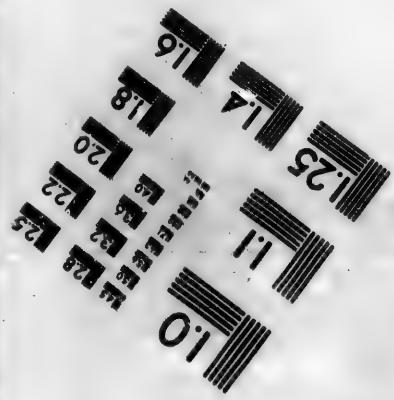


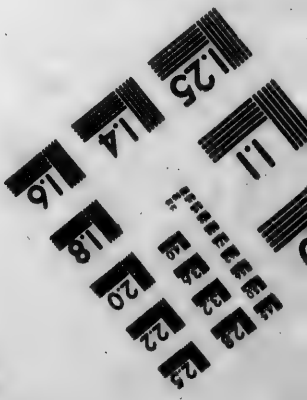


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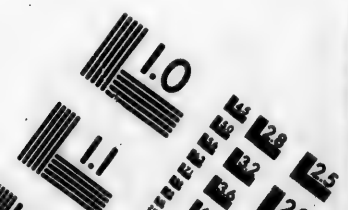

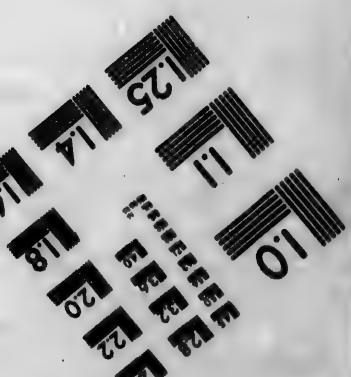

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side from 3 to 4 feet, while at the same time affording the only means of getting to the top.

Agades has but few industries, and these are mostly left to the women. They do all the leather work and weave all the rugs, and the cheese made by them is highly prized throughout the Sahara. The local trade is still very active, the transport of salt especially forming an important branch of the business of the place. By the Kel-Gheres and other Berber tribes of the district are organised all the caravans, which have to proceed to Bilma for the supply and afterwards convey it to the Sudan, where it is sold at the rate of from forty thousand to sixty thousand cowries per camel-load. The salt caravan never numbers less than three thousand camels. At the time of Barth's visit the medium of exchange in the Agades market was neither gold nor silver, nor shells nor bales of cloth, but only the grains of millet (*pennisetum*). But forty years have elapsed since the great explorer traversed this region, and forty years often see many changes in the customs and institutions of a people.

## Adghagh.

West of Air, and beyond the steppes inhabited by the Kel-Gheres and Itissan Berbers, a region of uplands, never yet visited by a single European traveller, occupies a superficial area of at least 80,000 square miles. Its very name of Adghagh, or Adrar, makes it probable that this vast tract does not consist of a series of level or uniform plateaux, but that it must be intersected by lofty mountain ranges. These heights, forming a group of highlands comparable to those of Ahaggar and Tibesti, rise to the north and north-east of the great bend described by the course of the Niger west of the deep sandy valley, through which percolate the waters of the Wed Tafassasset, known by the name of the Ballul Basso in its lower course, near its confluence with the Niger.

The southern slope of the Adghagh highlands is already comprised within the zone of regular rainfall. Here the moisture-bearing south winds, arrested by the mountain ranges, precipitate a considerable quantity of water, often in the form of hail, on the upland valleys. The Adghagh orographic system thus belongs in its higher regions to the Sudan, in its lower slopes to the Sahara.

The whole district abounding in pasture lands and forest vegetation along the river valleys, might become an "African Switzerland," adapted not only for camel-breeding, but also for cattle-farming. Hundreds of thousands of an industrious peasantry might also find employment in cultivating the alluvial tracts at the mouth of all the mountain gorges.*

But at present the country is in the possession of the Tuaregs, whose various tribes are comprised under the general designation of Awellimiden, and who, according to the national tradition, came originally from the region of the Saharian Sahel. Their ancestors appear to have roamed over the western plains, inter-

* Pouyanne, "Note sur l'établissement de la carte de la région comprise entre le Touat et Timbouctou."

mingled with the Ulad-Delim nation, with whom they had contracted numerous alliances. After making themselves masters of the Adghagh highlands and of the surrounding plains, they united with other Berber or with Nigritian tribes; then breaking away from their mountain fastnesses, and crossing the Niger, they penetrated far into the Sudan, where they reduced more than one Negro kingdom. But they have been partly subdued in their turn, at least in an ethnological and linguistic sense. Many have been assimilated in physical appearance to the Hausa Negroes, while their Berber speech has been largely affected by words and expressions borrowed from the Nigritian languages of Sudan.

Travellers speak vaguely of communities not yet converted to the Mohammedan faith, who are supposed to occupy the Adghagh uplands, interspersed amongst the Awellimiden tribes. These aborigines take the name of Daggatun, and speak the same Berber dialect as the Tuaregs; but their complexion is lighter, and they marry exclusively amongst themselves. No Targui, however poor, would ever consent to give his daughter in marriage to the wealthiest heir of the Daggatuns.

These pagans have no rights except through the mediation of some Targui patron, who in return for their tribute consents to become their "shield." But when the tribe sets out on a marauding or warlike expedition, the Daggatuns become the shield, being always placed in front. According to the Jewish traveller, Mardochai, these retainers of the Awellimiden are Jews, if not in religion at least by descent, and like their kindred elsewhere, occupy themselves chiefly with the retail traffic.

Being animated by little zeal for the faith, and remiss in the observance of the prescribed prayers and fasts, the Awellimiden have neither schools nor mosques. Their religious centre is in the Sudan, their marabuts being the Bakkai of Timbuktu, to whom they remit their offerings, and from whom they receive the interpretation of the Koran and all new institutions. Thus the ancient matriarchal custom, according to which the inheritance passes to the sister's sons, has now been abolished among the marabuts of the Awellimiden, surviving only in the civil population. In other respects the usages of the southern Tuaregs differ little from those of their northern kindred. Like them they dwell in leather tents or under matting, and the nation is divided into a noble class, and the imrhad, or caste of enslaved workers. Manual labour is held in contempt, and their chief occupation is incessant warfare with their neighbours, whether these be of kindred stock, like the Kel-Gheres and Itissan tribes, or of alien race, like the riverain populations of the Niger Valley.

## CHAPTER XII.

### WESTERN SAHARA.

EST of the transverse depression which extends from the southern limits of the province of Oran southwards to the Niger, and which throughout its entire length is probably occupied by the dried-up bed of the Messaura, the Sahara nowhere presents any prominent mountain ranges constituting a distinct physical region. Throughout its whole extent this vast tract, comprising a superficial area of over 800,000 square miles, presents nothing but an everlasting succession of dunes, depressions, slightly elevated hamadas, rocky ridges or low ranges scarcely anywhere exceeding 1,600 feet above sea-level. To the whole of this western section of the Sahara, which nevertheless has a breadth of over 600 miles, the inhabitants of the Wed Saura basin apply the general designation of Sahel, or "coastland," as if it were a mere inland extension of the Atlantic seaboard.

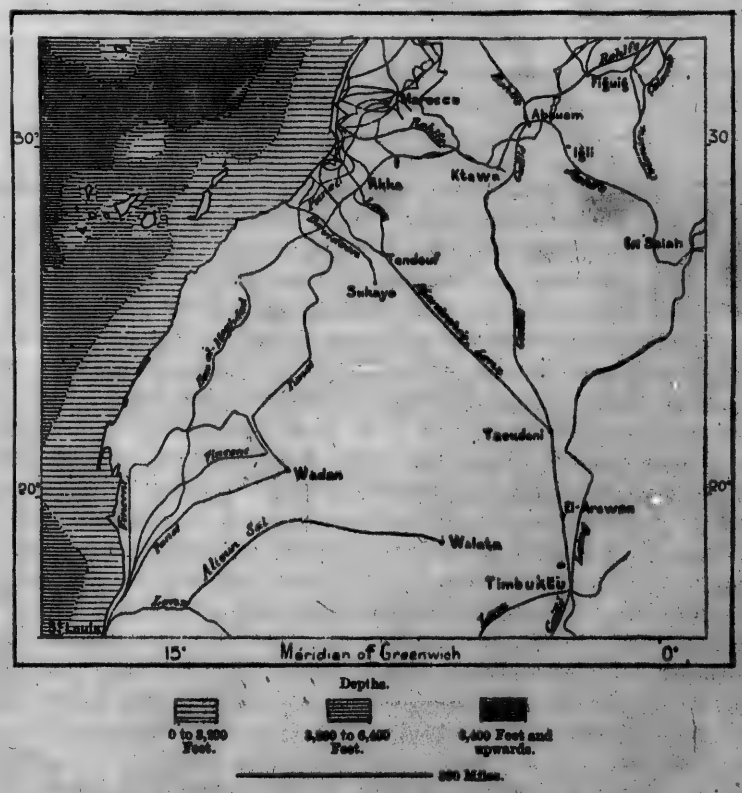
The northern division of this Saharian region is mainly occupied with low plateaux or level tracts and dunes, the hills forming unimportant groups, lost, as it were, like islets in the midst of a boundless sea of sands. South of the Wed Draa the caravan routes running in the direction of Timbuktu at first traverse nothing but hamadas with a mean elevation of from 1,250 to 1,300 feet, and separated from each other by river gorges, all inclined towards the west. The surface of the plateaux consists almost everywhere of paleozoic formations underlying more recent rocks, which by erosion have been cut up into the appearance of towers, crenellated walls, and other fantastic forms. Some of the serirs are paved, as it were, with a mosaic floor consisting of myriads of little quarts, agate, opal, and chalcedony pebbles.

#### The Iguidi Dunes—Juf—Adrar.

South of these plateaux stretches, like a marine inlet, the great erg of Iguidi, which is disposed in the direction of the Atlas range, that is, from south-west to north-east, and which begins in sight of Twat, on the left side of the Wed Saura basin. At the point where the traveller, Lenz, crossed the chain of dunes east of the famous Bel-Abbas well, the general movement of the sands lies in the direction from north-west to south-east. Such, at least, appears to be the trend, judging

from the normal disposition of the dunes, whose long incline slopes towards the marine wind, while the more abrupt declivity is turned in the direction of the continent. The prevailing atmospheric current in this region is a sea-breeze derived from the deviation of the regular trade-winds. The mean height of the Iguidi dunes ranges from 300 to 350 feet, although numerous crests rise to a

Fig. 203.—Routes of the Chief Explorers in the Western Sahara.
Scale 1 : 22,000,000.




still greater elevation. Throughout the sands are disseminated little black particles, or rather crystals, derived from the disintegrated rocks.

South of the chain of sandhills follow the El-Eglab mountains, consisting of granite and porphyry masses, which rise to heights of from 1,000 to 1,300 feet above the plains—heights which appear prodigious in contrast with the dead uniformity of the surrounding waste. Farther east stretches to an unknown distance the dangerous Tanezruft region, so much dreaded by the caravans owing to the general absence of water. But towards the south winds the bed of a torrent, which bears the name of the Wed Sus, like the river on the Morocco frontier, and which occasionally presents to the traveller's gaze a slender liquid streak.

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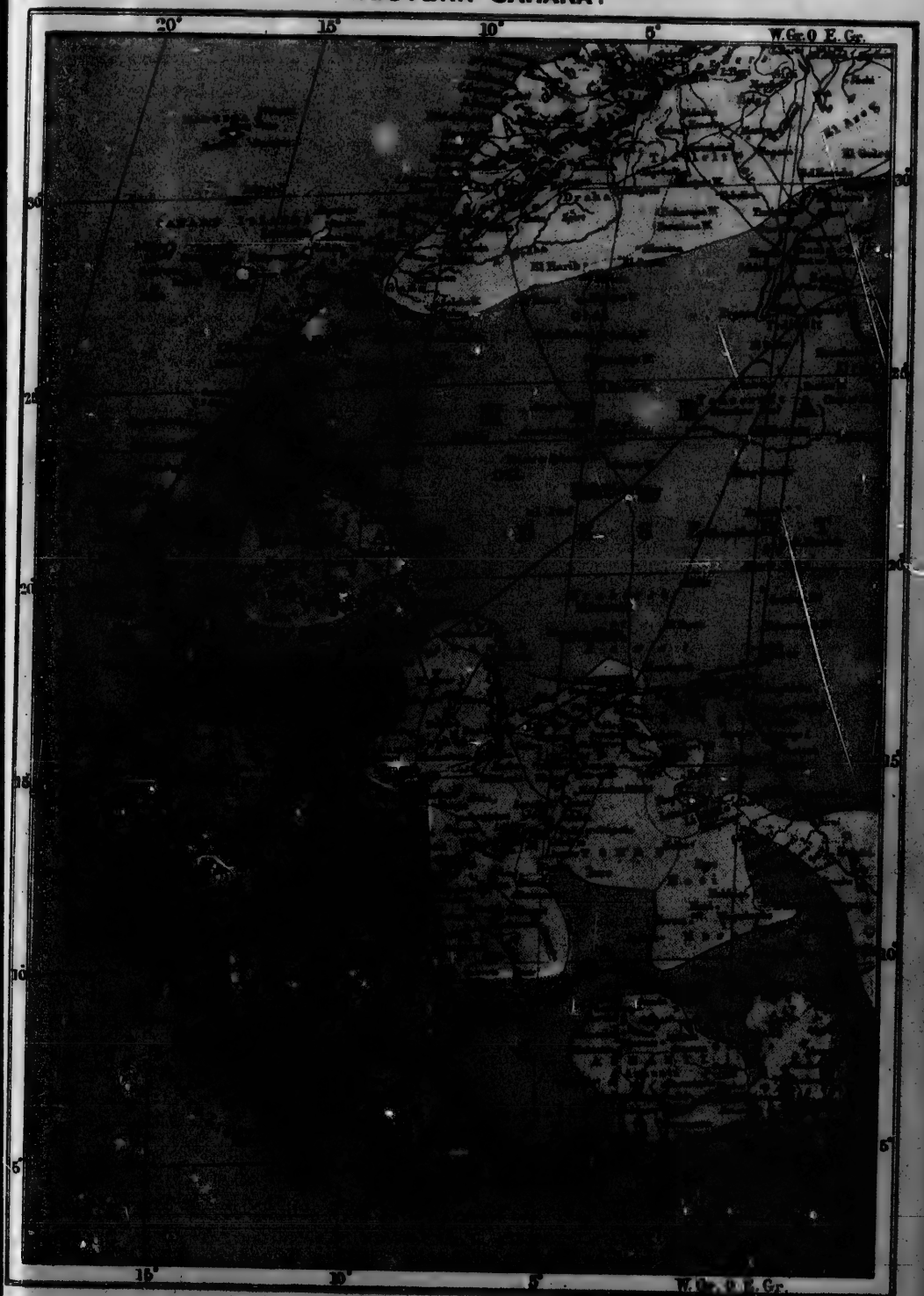
## WESTERN SAHARA.




NEW YORK, D. APPLETON & CO

South of this Saharian Wed Sus, other dreary wastes have still to be traversed, forming a vast sea of sands, which is prolonged for hundreds of miles, in the direction of the west. This region is indicated on the maps by the name of Juf, or "Depression," although Lenz heard no mention of this term, except as applied to a ravine or small watercourse known as the Wed-el-Juf. Possibly the Juf may be less elevated towards the west, but there is no reason to suppose that it falls anywhere below the level of the Atlantic. Hence the project put forward by the English speculator, Donald Mackenzie, of cutting a canal in order to create in this region an "inland sea," with an estimated superficial area of 225,000,000 acres, or nearly twice the size of France, is based on a flight of the imagination destitute of the least geographical foundation.*

The region of the Juf is the least known section of the Western Sahara, and like the Libyan desert in the extreme east, it still remains a blank space on our maps. This vast wilderness, covering an extent of over 120,000 square miles, has hitherto been traversed by no European explorer, nor crossed by any caravan route.

West of the Juf and of the dreaded Maghter dunes, the monotony of the desert is broken by a group of rocky heights, to which the general name of Adrar (Aderer), or the "Mountain," has been applied, as to so many similar eminences in the Berber country. But this "mountain" of the Western Sahara, which is more specially known by the designation of Temar, cannot be compared with the other Adrars of Mauritania and the central regions of the desert. It is in fact little more than a mere stony tract connected towards its southern extremity with the rugged plateaux of Tagant, and rising here and there to heights of from 250 to 300 feet above the surrounding sandy wastes. According to the statement made to M. Masqueray by three young pilgrims from Adrar, it is "a long island hemmed in between sandy plains, which present the appearance of a sea, and whose restless surface rolls away like the ocean waves." † But these sandy spaces, above which rises the "mountain," would seem to stand at a considerable altitude, at least if the statement can be credited that at the declivity of the El-Aksabi plateau, to the north of Adrar, the outer escarpments present elevations of from 1,350 to 1,650 feet. During the descent down these abrupt inclines, the camels often stumble, and rolling over, get killed at the foot of the cliff.

Several other eminences, either isolated or developing continuous ranges, are scattered to the north and west of the Adrar heights. The most remarkable of these eminences, which are composed mainly of stratified sandstones, are the rocks of El-Guenâter, that is to say, the "Bridges" or "Archways," situated about midway between Adrar and the Wed Draa Valley. They consist of basalt cliffs, between which huge blocks remain suspended, like the keystones of immense vaulted roofs or arches.

West of Adrar the highest group is the so-called Adrar Settuf, or "Shell Mountain," round which is developed the most advanced section of the Saharian coast-

* Donald Mackenzie, "The Flooding of the Sahara."

† "Bulletin of the Paris Commercial Geographical Society," March and April, 1880.

line between Cape Berbas and Cape Blanc. The coast itself is here formed of slightly elevated cliffs, also containing many fossil shells belonging for the most part to species which still survive in the surrounding waters.

North of Adrar Settuf stretch the vast plains of Tiris, forming a kind of granite floor pierced here and there by sharp rocks, "which serve as observatories for men and mouflons." The sand which is formed by the decomposition of the granite supports an aromatic vegetation affording excellent pasturage for camels.

### Rivers of the Western Sahara.

The neighbourhood of the sea and of the zone of regular tropical rains secures for the Western Sahara a sufficient quantity of water to prevent this region from being entirely destitute, if not of a fully developed hydrographic system, at least of some intermittent streams and watercourses. South of the Wed Draa, which receives a considerable number of lateral affluents, another torrent drains in the direction of the Atlantic, terminating in a large mouth between the cliffs, which has been named the Boca Grande by the fishermen from the Canary Islands frequenting this coast. This is the Wed Shibica of the Arabs, and here probably stood the ancient Spanish settlement of Santa-Cruz de Mar-Pequeña. At this point Mackenzie proposed to begin cutting the canal which was to convey the Atlantic Ocean across the intermediate waterparting into the imaginary depression of the Juf, and thus flood the Sahara. About 180 or 200 miles from the sea there certainly exists a watershed running parallel with the coast, whence the rain waters flow in one direction through independent channels seawards, in the other descend towards the south-east. In this direction they disappear beneath the Iguidi dunes, beyond which they again come to the surface in the form of springs and little *gueltas*, that is to say, small meres and saline basins.

South of the Boca Grande, the only river valley of any great extent is the Sakiet-el-Homra, or "Red Watercourse," which has sometimes been designated as the official limit of Morocco, although really lying some 300 miles beyond the true frontier of the empire.

The Adrar heights themselves also possess an independent hydrographic system, although certainly of very limited extent. The chain of hills skirting the east side of this group of eminences sends down supplies sufficient to feed two rivers, both of which flow in the direction from north-east to south-west, that is, parallel with the main axis of Adrar. The northern stream comes to an end in a depression where its waters spread out and evaporate; yet it seems to be continued by the southern stream, both having their origin in the same valley. This watercourse, on whose banks are concentrated nearly all the inhabitants of Adrar, escapes from the region of highlands, ultimately losing itself in a marsh lying farther south in the desert.

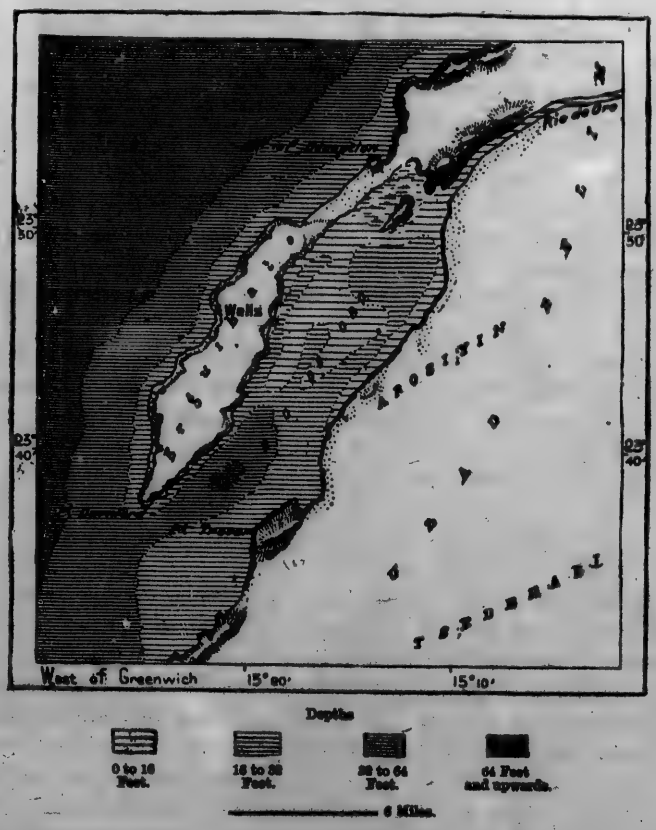
### The Atlantic Seaboard.

The coast, which is broken at intervals to admit a passage for the inland streams between its cliffs and dunes, is one of the most dangerous in the whole of

Africa. Its forbidding aspect naturally inspired terror in the Portuguese mariners of the fifteenth century, when compelled by their instructions to follow a treacherous seaboar which had already been sighted before them by the Phœnicians and French navigators from Dieppe. Cape Nun, or "Non," was so named, said these seafarers, playing on the word, because the sea echoed "Non" (No!) to any vessel,

Fig. 204.—Rio de Oro.

Scale 1 : 400,000.




attempting to round the point. According to another legend, those white mariners who sailed beyond it into the southern waters had all returned black.

From this dreaded headland to Cape Juby, from Cape Juby to Parchel or Bojador, and thence to Cape Blanco, the aspect of the coast changes little for a total distance of about 720 miles. The projecting promontories are indistinctly marked on the horizon, while the inland heights present everywhere the same monotonous appearance of uniform tablelands or sandy hills. The grey dunes and low brown beach, almost undistinguishable from the muddy surf, scarcely anywhere

present a patch of verdure to relieve the gaze, or suggest the presence of man. The sea breaks several miles from the coast, and when the west wind blows, the first white crests of foam are formed in 50 feet of water.

From October to April sailors carefully avoid these surf-beaten shores, where not a single lighthouse has yet been erected, where the land is almost perpetually wrapped in dense fog, and where a few hours suffice for the gale to lash the waters into billows of monstrous size. For sailing vessels the most dangerous part of the Saharian coast is the section lying between Boca Grande and Cape Juby. The ocean stream skirting the continent from north to south, usually at some distance from the mainland, and which is most felt some 6 miles seawards, also sets directly in shore. Hence vessels here often drift helplessly towards the inhospitable beach, which has been the scene of many shipwrecks. The current, which has a normal velocity of little over half a mile, acquires more than double that rate of speed near Cape Juby, probably owing to the neighbourhood of the Canary Islands confining it to a narrower compass.

On the exposed Saharian seaboard, little shelter is afforded to shipping, although about midway between Cape Bojador and Cape Blanco a long inlet runs parallel with the sea, here penetrating through a break in the line of cliffs. This is the Rio de Oro, or "River of Gold," so named because in the year 1442 the Portuguese obtained here a little gold-dust by barter. They thought they had discovered the golden "Pactolus," which was reported to form a branch of the Nile in the interior of the continent. The approach is difficult, and sailors penetrating into the river in foul weather run the risk of perishing of hunger, because the bar prevents their return and the land yields nothing.

### Flora, Fauna, and Inhabitants of the Western Sahara.

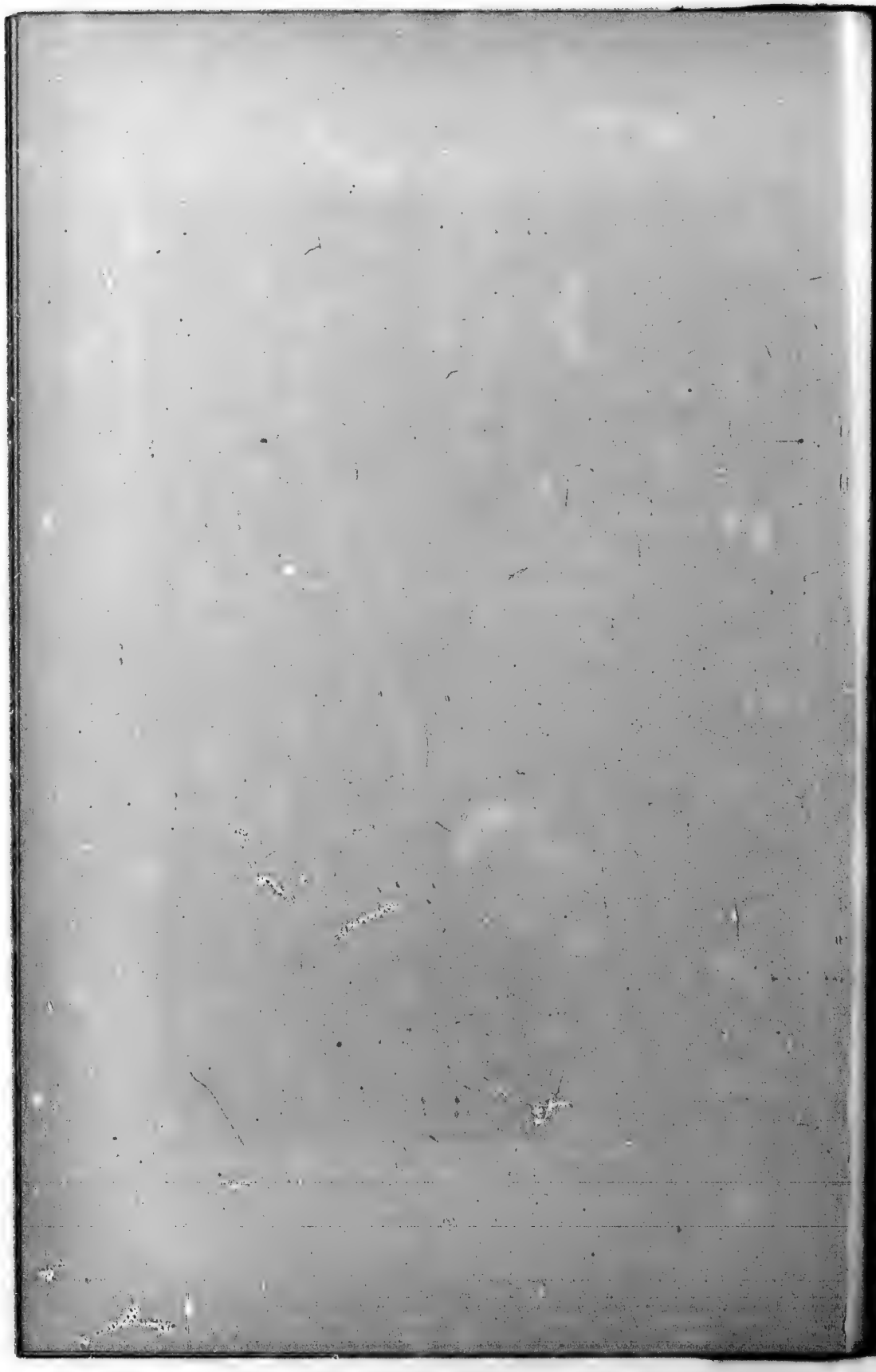
Receiving a share of the regular tropical rains, Western Sahara is not entirely destitute of vegetation, and, like other regions of the desert, it contains some few oases. Even in the midst of the dunes the little saline swamps are covered here and there with tufts of herbage, which supply fodder for the herdsmen's camels. In the southern parts of the Juf, extensive tracts clothed with alfa, are known by the designation of El-Miraia, or "the Mirror," doubtless owing to the shifting play of dull colours and silvery tints, as the sea of alfa grass waves in the breeze. These alfa plains indicate the neighbourhood of the steppe region, which with its forests of acacias and mimosas, follows farther south between the desert and the Sudan.

Adrar, which already belongs to this intermediate zone, is overgrown with gum-trees, in some places so numerous that "the gum would be given for nothing to anyone wishing to come and fetch it."*

In these regions the zebra begins to make its appearance, and one of the commonest animals is the ostrich, which suffers so much from the heat that it is easily run down by the hunter mounted on an ordinary horse. On the seacoast the

* E. Masqueray, *loc. cit.*

MOUTH OF THE WED DRAA—VIEW TAKEN FROM THE SEA.



fishermen of the Ulad Bu-Sba tribe lie in wait for these birds when they come to refresh themselves by beating the water with their wings. Then stealing behind the dunes, they suddenly spring up raising loud cries, which so terrifies the ostriches that they rush deeper into the sea, and so are captured one by one.

Like Marocco and the other Barbary States, the Western Sahara is divided between the autochthonous Berbers and the intruding Arabs. The Ait-Attas, Dui-Menias, Berabers, Dui-Bellals, and other tribes encamp on the steppes, changing their quarters according to the state of the grazing-grounds, and at times undertaking long journeys, either for the purposes of trade, or on missions of vengeance or plunder. The Arab horsemen of the Sahel are said by Duveyrier to push their marauding expeditions as far as the route between Insalah and Timbuktu in order to pillage passing caravans. These raids are accompanied by camels laden with water and suet. They are fed on the suet as long as it holds out, and then killed to supply food for man and beast. Some of these expeditions last for several months at a time.

The caravans equipped in the regions south of Marocco are organised either in Tafilelt, or in the oases skirting the great bend of the Wed Draa, or else in the petty Berber states on the coast. One of their rendezvous is the Tekna oasis, situated in the basin of the "Red Watercourse." But a more favourite station is the little town of *Tenduf*, founded during the present century exclusively for trading purposes. It forms a group of over a hundred houses of beaten earth, encircled by a few palms, and situated on a wed flowing towards the Draa basin. The town is inhabited by the Tajakant Berbers, who yield obedience to an Arab chief of the Maribda tribe. This market does a considerable trade not only with Marocco and Sudan, but also with Twat and Arabia. Once a year, about December or January, the Tajakants assemble here to form the Kafila-el-Kebir, or "Great Caravan" of Timbuktu, which comprises several hundred persons and thousands of camels. During his visit to this place, Lenz was informed that the total value of the yearly caravan trade averaged about £30,000. The return journey usually takes place in May or June.

Owing to the devotion of its inhabitants to trade, Tenduf enjoys absolute religious tolerance. The Tajakant people are also far more enlightened and better educated than most of the other Saharian tribes. They supply teachers to all the surrounding communities. The various tribes of this district are regarded as belonging to a specially noble lineage; hence even in Algeria many of the Berber clans claim with pride to have come originally from the Sakiet-el-Hamra country.

## Topography.

On the route from Tenduf to Timbuktu, which runs due south-west along the line of hamadas and sands, the only centres of population that can be called towns are *Taudeni* and *Arauan*. The former, lying near the Wed Teli, in a low-lying part of the Juf depression, is an important station for caravans, which here find water in abundance. But the chief resource of the place are its deposits of

mineral salt, which supply a large part of Western Sudan. The miners hew out blocks over three feet long weighing about seventy pounds, and of these four make a camel-load. In the vicinity are seen the remains of some former cultivated lands, and even abandoned villages. But the present inhabitants of Taudeni, a half-caste Arab and Negro people, occupy themselves exclusively with the salt-works. They call themselves Drawi, implying that they came originally from the Wed Draa district. But having ceased to keep up their relations with the mother-country, they depend now on the Berabish Arabs and on the merchants of Timbuktu. They lead a miserable existence, drinking a brackish water, which they endeavour to correct with curdled milk and other ingredients. Those engaged in the salt-quarries live part of their time as troglodytes. When the heat becomes excessive, they take refuge in the artificial caves excavated in the tufa hills skirting the Wed Teli. Till recently they still used instruments of serpentine in the salt-works, and these stone implements have become an article of export to Timbuktu, the Sudanese women employing them for grinding the corn.

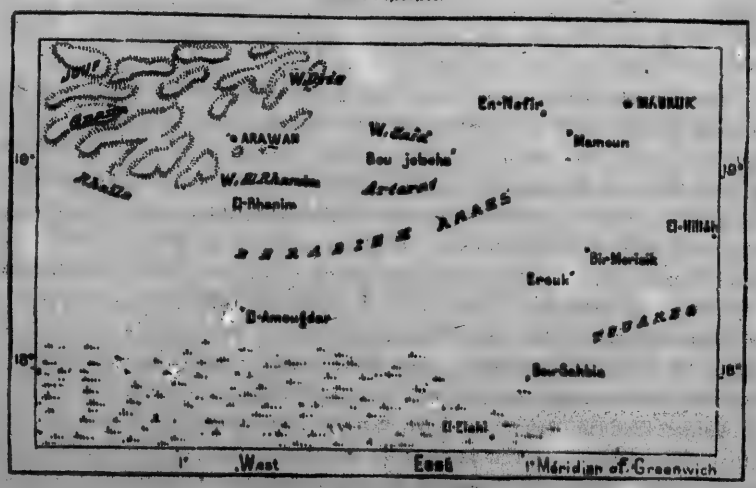
Arawan, lying near the southern margin of the desert, is the outpost of Timbuktu. It forms a converging point for caravans, corresponding to Tenduf at the other side of the Sahara. Although lying at a short distance to the north of the grassy steppes and mimosa forests, and abounding in water, which flows in an underground channel under the very houses, Arawan is one of the most wretched-looking places in the whole of the Sahara. Nothing is anywhere to be seen except dunes, unrelieved by a single tree, or a patch of verdure for the camels. The houses, scattered about irregularly to the number of about a hundred, form quadrangular masses with only a ground floor. The beaten-earth walls are pierced with a single opening for a low door enframed in ornamental work, occupying the whole height of the wall. Clay mouldings also embellish the edge of the terraced roof. The house is built round an inner court, which however is seldom occupied, owing to the sand filling the atmosphere, and the dense swarms of flies brought with every fresh convoy. Being an exclusively commercial town, troubling itself little with the religion of its visitors, Arawan is inhabited only by traders from Timbuktu, their retainers, and the Haratin, or free Negroes, who attend to the caravans, watering, loading, and harnessing the camels.

The Barabish tribe, who act as escorts, defending the convoys from their hereditary Tuareg enemies, levy a tax on all travellers passing through their territory. Notwithstanding their name, which would appear to be of Berber origin, the Berabish are, according to Lenz, of genuine Arab extraction. At the time of Lenz's visit, the tribal chief had in his possession most of the objects found on the body of Laing, when that explorer was killed in the desert in the year 1826. According to native report, his death was due to the failure of his medicines. Two patients whom he had treated died one after the other; so it was feared that he was distributing poison or had the evil eye. In the same region of the Sahara, ten days' march to the north of Taudeni, is situated *Sukaya*, where the English traveller was murdered by the Haribs ten years after the assassination of Laing.

A few other towns have been founded on the southern frontier of the desert. About 60 miles east of Arawan, on the route of the now-abandoned Es-Suk, stand the towns of *Mabruk* (*Mebruka*) and *Mamun*, both near the Tanesruft desert, and both inhabited by Negroes, who also acknowledge the supremacy of the Berabish Arabs. A more important place is *Walata*, which is said to be as large as Timbuktu, and which was visited in 1860 by the Senegalese officer, Alium Sal. It lies about 240 miles to the south-west of Arawan, north of the El-Hodh plateau, covering a space of nearly half a square mile in an arid district bare of all vegetation. Hence, like Arawan, it depends for its supplies on passing caravans, but has nevertheless become a great centre of trade between the Senegal tribes and Tajakants of Tenduf.

Fig. 205.—Arawan and Mabruk.

Scale 1 : 5,500,000.




A special local industry is the manufacture of sacks and tobacco-boxes sold in every market of the Sudan.

In the neighbourhood are seen numerous ruins, the habitations of a now-vanished people. But towards the north-west, in the direction of Adrar, follow several oases, amongst others that of *Tishit*, capital of the Kounta tribe. The town contains about six hundred stone houses. This borderland of the Sahara is roamed over by several Arab tribes, such as the Ulad-Mahmud, Ulad-Embarek, Ulad-en-Nacer; but the settled population of the oases are Asers, a Negro people of Mandingo stock originally from beyond the Senegal river.

In the sahel or coastlands there are no towns, but only a few mines and camping-grounds. *Termassen*, lying in the territory of the Reguibat (Rgueibat) tribe, south of the Wed Draa, is now little more than a group of stores where the surrounding Arabs keep their supply of corn. *Zemmur* and *Grona*, on the water-parting between the Sakiet-el-Homra and Juf basins, although figuring as towns

on our maps, are mere encampments of tents set up in the glens where flourish a few mimosas. The nomads of these districts belong to various races. The Ulad Bu-Sba, or "Sons of the Lion," Arabs by extraction, are slave-dealers and much dreaded marauders. The Sherguins, of Berber stock, are distinguished from all their neighbours by their round short features, small nose, prominent ears, high forehead, and small stature.

The Tidrarins, also Berbers, keep generally near the seacoast, where they traffic with the fishermen from the Canary Islands, exchanging milk for fish and other produce. The Tidrarins fish only with the line or net, and have no skin boats, as had been stated by some travellers before Panet's expedition. They belong to the powerful Ulad-Delim confederation, whose tribes are scattered over the coastlands from the Wed Draa estuary to the plains bordering on the Adrar uplands.

### The Adrar Nomads.

These nomads, allied to the Trarza and Brakna tribes on the right bank of the Senegal, are like them a branch of the Zenagas, largely intermingled with the Arabs, but much less so with Negroes. They also speak a Berber dialect, differing little from the Tamazight language. Their women are remarkably handsome, and owing to the roving habits of the tribes, show less tendency to obesity, a feature so highly esteemed amongst the other peoples of the Western Sahara. The Ulad-Delim are always on the alert for attack or retreat, and when the order is given to strike their tents, half an hour suffices to collect the herds, pack all movables, and start for the next camping-ground.

The Ulad-Delim, Ulad Bu-Sba, and Yahia Ben-Othman tribes are also met on the margin of the great saline of Ijil (Ishil), although the produce of the sebkha belongs not to them, but to the Kounta people, whose territory lies to the south-east of Adrar. They require payment in camels for permission to extract the salt and an export duty. No town has been founded on the shores of the sebkha, although a considerable traffic is carried on in the camps about the salt-works, especially after the rainy season, when the depression is flooded and all operations arrested. The salt is cut in slabs, the same size as those of Taudeni, the total annual quantity forwarded from Ijil to the Sudan being, according to Vincent, twenty thousand camel-loads, or about four thousand tons. The chief market for the produce is in the Tishit oasis amongst the owners of the saline. Here the people of Sudan bring gangs of slaves, who are bartered for the salt, three slabs of which represent the average price of a man.

Although rulers of Adrar, the Yahia Ben-Othmans do not reside in this district, but keep moving about from place to place collecting the taxes imposed on the subject tribes. The settled populations, comprising altogether about seven thousand persons, besides the slaves, are of Berber extraction, far less mingled with foreign elements than the neighbouring "Moors." The current speech is also usually the Zenaga Berber dialect. They dwell for the most part on the banks of the streams that take their rise in the interior of Adrar. *El-Guedim*, or

*El-Kedima*, that is, the "Old Town," although their most ancient settlement, is nevertheless situated beyond the Adrar uplands on the verge of the eastern desert. Near it is the town of *Wadan*, formerly the largest and most flourishing in the district. It was also the most learned, whence its name, which in Arabic means the "Two Rivers," that is to say, according to the local interpretation, the "River of Dates and the River of Science." During the first half of the sixteenth century the Portuguese had here a factory, which, however, they were compelled to abandon, owing to its great distance from the Atlantic seaboard.

At the time of Vincent's journey the capital of the district was *Shinguiti*, which stood in the midst of the dunes to the south-west of Wadan. Yet although lost among the sands, it was said to have contained as many as eight hundred houses, with a population of from three thousand to four thousand souls. *Attar*, the present residence of the chief, and *Ujef*, are also populous villages.

Altogether the Adrar oases contain about sixty thousand date-trees, and besides these plantations the natives also cultivate wheat, barley, and some other grains. According to Panet, the dowry of the bride is in reality merely the price set upon her head, usually fixed at thirteen ells of cotton. Should she fail to please her husband, she may be divorced by receiving back the piece of goods. But should she on her part be dissatisfied with her husband, she may resume her liberty on the condition of returning the dowry.

### The Marabuts—European Influences.

All the inhabitants of Adrar are marabuts, recognising the supremacy of a spiritual chief who resides at El-Guadim, and who also enjoys a certain temporal authority. Some of the natives belong to religious confraternities, whose head-quarters are in Marocco, Algeria, and Tripolitana. In most Mussulman lands the marabuts are revered by the warlike classes; but in this frontier region of the Sahara they are held in little esteem. They certainly occupy a higher position than the serfs and slaves, who are designated by the term *lahmeh*, that is to say, "flesh good to eat;" but the respect paid to them is of a purely formal character, except perhaps during the celebration of the religious rites. On these occasions they take their stand on a mound or a rock set up in a space cleared of its scrub and stones, to which is applied the title of mosque, like the sacred edifices erected in towns. Here the prayers are recited in a loud voice by the marabuts, prostrating themselves in concert with all the congregation of tribal warriors. Being mostly absorbed in mystic contemplation and generally of a meek disposition, the marabuts of Adrar and neighbouring districts submit uncomplainingly to the oppressive exactions imposed on them by the Moors of the military caste. At the same time, they would probably accept with satisfaction a change of government, by which they might acquire a greater share of influence than they seem at present to enjoy. Hence it is through their co-operation that the French of the Senegal settlements have several times endeavoured to re-establish the Portuguese factories that have now been abandoned for nearly four hundred years.

Thanks also to their support, the Spaniards have become, since the end of the year 1884, the nominal masters of the entire strip of coastlands which stretch for a space of about 480 miles, between Capes Bojador and Blanco. Through their influence Spain hopes perhaps to be able to penetrate into the interior, and thus attract the caravan trade towards its new settlements on the Atlantic seaboard. Four stations have already been founded on this coast, one at *Villa Cisneros*, in the Erguibats peninsula, another farther east on the shore of the Rio de Oro inlet, and one each on the *Cintra* and *Del Oeste* creeks. But hitherto all these Spanish settlements have remained little more than obscure fishing villages, less important even than were formerly similar establishments founded in the same districts by the fishermen of the Canary Islands. At that time the waters were crowded with fishing smacks in the neighbourhood of Cape Bojador, and especially about Angra dos Ruyvos, or "Roach Bay."

# APPENDIX.

## STATISTICAL TABLES.

### TRIPOLITANA.

| | |
|---|---|
| Area, including the Kufra Oasis | 485,000 sq. miles |
| Population, according to Behm and Wagner | 1,010,000 |
| Area of Barka, excluding the southern oases | 20,000 sq. miles |
| Approximate population, according to Camperio | 246,000 |

AUJILA OASES.

| | Area. | Population. | Date-palms. |
|---|---|---|---|
| Aujila | 8 sq. miles (?) | 4,000 | 40,000 |
| Jalo | 80 ,, (?) | 6,000 | 100,000 |
| Wadi | 80 ,, (?) | 1,080 | 40,000 (?) |
| Leshkerreh | 4 ,, (?) | 500 | 20,000 (?) |

KUFRA OASES.

| | Area according to Behm. |
|---|---|
| Taiserbo | 2,535 sq. miles |
| Sirhen | 320 ,, |
| Buscima | 125 ,, |
| Erbehna | 125 ,, |
| Kebabo | 3,500 ,, |
| Total | 7,105 ,, |

PALM GROVES OF TRIPOLITANA.

| | |
|---|---|
| Meshiya of Tripoli, according to Barth | 1,000,000 palms. |
| Plantations of Zawya ,, ,, | 130,000 ,, |
| ,, Zensur ,, Bohifs | 100,000 ,, |
| ,, Tajura ,, ,, | 200,000 ,, |
| Oasis of Zella ,, ,, | 100,000 ,, |
| ,, Jofra ,, ,, | 15,000 ,, |
| ,, Misda and Gharis according to Barth | 1,000 ,, |
| Other plantations | 100,000(?),, |

ADMINISTRATIVE DIVISIONS OF TRIPOLITANA.

| Provinces. | Districts. | Chief Towns. |
|---|---|---|
| BARKA | Jebel-el-Akahah | Derna |
| | Jebel-el-Akhdar | Benghazi |
| | Aujila Oasis | Aujila |
| | Jalo Oasis | Lebba |
| | Leshkerreh Oasis | — |
| TRIPOLI | Tripoli | Tripoli |
| | Zawya | Zawya |
| | Khoms | Lebda |
| | Jebel | Kasr-el-Jebel |
| | Ghadames | Ghadames |

ADMINISTRATIVE DIVISIONS OF TRIPOLITANA—*continued.*

| Provinces. | Districts. | Chief Towns. |
|---|---|---|
| FEZZAN | Bu-Njeim | Bu-Njeim |
| | Jofra | Sokna |
| | Zella | Zella |
| | Wady Shiati | Brak |
| | Fogha | Fogha |
| | Wady Lajal (Sebha) | Jedid |
| | Hofra | Murzuk |
| RHAT | | Rhat |

Export of cattle from Cyrenaica to Alexandria (1882), 14,000.
Trade of Benghazi (1862), £41,000; 1871, £467,000.
Shipping of Benghazi (1878), 511 steamers, 891 sailing vessels; tonnage 300,417.
Sponge fisheries of Benghazi: yearly value, £80,000.
Trade of Tripoli (1880); imports, £714,200; exports, £603,900; total, £1,318,100.
Export of alfa from Tripoli in 1870, 1,022 tons; value £1,600
" " 1875, 33,590 " " £94,900

SHIPPING OF TRIPOLI (1880).

Steamers, 516; sailing vessels, 1,414; tonnage, 433,405

## FEZZAN.

Area, 120,000 square miles; population, according to Rohlfs, 200,000.

TOWNS OF FEZZAN, WITH APPROXIMATE POPULATIONS.

| | | | |
|---|---|---|---|
| **Wadi Shiati.** | | Semnu | 1,500 |
| Brak | 1,000 | Zighen | 1,000 |
| Ederi | 800 | **Hofra.** | |
| **Wadi Lajal.** | | Murzuk and outskirts | 6,500 |
| Tekertiba | 1,000 | Traghen | 1,500 |
| Ugraféfé | 800 | Zuila | 1,000 |
| Ubari | 1,200 | Temissa | 600 |
| Jedid | 1,500 | **Other Oases.** | |
| Karda | 1,000 | Fogha | 1,000 |
| Temenhint | 800 | Gatrun | 1,500 |
| | | Tejerri | 800 |

## TUNISIA.

| | |
|---|---|
| Area, according to Behm and Wagner | 46,550 sq. miles |
| Approximate population | 1,500,000 |

EUROPEANS IN TUNISIA (1881), 35,987.

PALM GROVES OF THE TUNISIAN OASES.

| | |
|---|---|
| Oasis of Tozor | 313,000 palms |
| " Nafta | 240,000 " |
| " El-Udian | 188,000 " |
| " El-Hamma | 80,000 " |

APPROXIMATE POPULATION OF TUNIS (1885).

| | | |
|---|---|---|
| Mussulmans | Tunisians, properly so called | 40,000 |
| | Algerians, Mzabites, or Swafas | 4,200 |
| | Sundry | 2,000 |
| Christians | | 16,000 |
| Jews | | 25,000 |
| | Total | 87,200 |

SHIPPING OF GOLETTA (1884), 1,000,000 tons.

ELEMENTARY SCHOOLS IN TUNIS.

| | | |
|---|---|---|
| 19 | Jewish for boys | 969 pupils. |
| 18 | French and others | 580 " |
| 4 | Jewish for girls | 278 " |
| 15 | French and others | 660 " |
| Total 56 | schools. | 2,487 pupils. |

### Total Shipping of Tunisia (1882).

Steamers and sailing vessels, 3,641; tonnage, 1,478,000.

### Total Trade of Tunisia.

| 1881. | | 1882. |
|---|---|---|
| Imports, £711,260 | | Imports £848,940 |
| Exports, £536,420 | | Exports £524,645 |
| Total £1,247,680 | | £1,373,585 |

### Trade of Tunis and Tripoli with Great Britain.

Exports to Great Britain (1882), £430,320; imports to Great Britain (1882), £184,310.

### Budget of Tunisia (1884).

Income, £422,670; expenditure, £479,670.

| | |
|---|---|
| Debt of the Bey of Tunis (1869) | £800,000 |
| ,, ,, ,, (1869) | 11,000,000 |

### Railways and Telegraphs.

| | | |
|---|---|---|
| Railways (1883) | mileage 200 | receipts £35,000 |
| French Railways (1884) | ,, 133 | |
| Telegraphs (1884) | ,, 800 | |

### Administrative Divisions and Chief Towns of Tunisia.

| Utans or Governments. | Chief Towns. | Population. |
|---|---|---|
| Tunis | Tunis | 90,000 |
| Goletta | Goletta | 3,500 |
| Mohammedia and Mornak | — | — |
| Hammam-Lif | — | — |
| Biserta | Biserta | 5,000 |
| Matêr | Matêr | 2,500 |
| Tabarka | Tabarka | — |
| Beja | Beja | 4,500 |
| El-Kef | El-Kef | 5,000 |
| Teburzuk | Teburzuk | 2,500 |
| Testur | — | — |
| Mejez-el-Bab | — | — |
| Teburba | Teburba | 2,500 |
| Zaghwan | Zaghwan | 2,900 |
| Soliman | Nabel | 4,800 |
| | Kelibia | 2,900 |
| Sahel and Susa | Susa | 8,000 |
| | Mesken | 10,000 |
| | Kelaa-Kebira | 7,000 |
| Monastir | Monastir | 7,500 |
| | Jemâl | 6,000 |
| | Moknin | 6,000 |
| | Bokalta | 4,000 |
| | Tebulba | 3,000 |
| Mahdiya | Mahdiya | 6,000 |
| Sfakes and Kerkennah | Sfakes | 30,000 |
| Kairwan | Kairwan | 12,000 |
| Gafsa | Gafsa | 4,500 |
| Jerid | Tozer Oasis | 10,000 |
| | Nafta Oasis | 8,000 |
| | El-Udian Oasis | 3,800 |
| Arad | Cabes | 10,000 |
| Utan Gnebli | — | — |
| Jerba | Humt-Suk | 3,000 |

## ALGERIA.

| Area without the desert. | Population (Census of 1881). | Estimated Population (1885). |
|---|---|---|
| 176,000 square miles | 2,850,866 Musulmans | 2,900,000 |
| | 423,881 Europeans | 460,000 |
| | 35,665 Jews | 40,000 |
| Total | 3,310,412 | 3,400,000 |

MEAN ANNUAL TEMPERATURE AND RAINFALL ON THE ALGERIAN COAST.

| | Mean temperature. | Mean rainfall. |
|---|---|---|
| Oran | 61° Fahr. | 12 inches |
| Algiers | 63° ,, | 28 ,, |
| Philippeville | 63° ,, | 34 ,, |
| La Calle | 66° ,, | 37 ,, |

AREA AND POPULATION OF KABYLIA WITHOUT PALESTRO AND BENI MANSUR (1881).

| | Population. | Area in Acres. |
|---|---|---|
| Great Kabylia (Arrondissement of Tizi-Uzu) | 417,012 | 1,392,000 |
| Little Kabylia ( ,, ,, Bougie) | 200,615 | 1,211,000 |

POPULATION OF ORAN (1881).

| | |
|---|---|
| French and Jews | 23,070 |
| Foreigners | 28,223 |
| Mohammedans | 9,084 |
| Total | 59,377 |

POPULATION OF THE ALGERIAN CLOSED BASINS AND ALGERIAN SAHARA (1881).

| | |
|---|---|
| French | 3,589 |
| Naturalised Jews | 1,101 |
| Foreigners | 1,784 |
| Total | 6,474 |

PROGRESS OF THE POPULATION OF ALGERIA SINCE 1851.

| | | |
|---|---|---|
| Census of 1851—52 | 2,554,121 | |
| ,, 1872 | 2,416,225 | : Decrease, 137,896 |
| ,, 1878 | 2,857,626 | : Increase, 451,401 |
| ,, 1881 | 3,310,412 | : ,, 442,786 |

VITAL STATISTICS OF THE EUROPEAN POPULATION OF ALGERIA (1830—1853.)

| | | |
|---|---|---|
| Province of Algeria | 25,411 births, | 34,979 deaths. |
| ,, Oran | 11,755 ,, | 13,692 ,, |
| ,, Constantine | 7,734 ,, | 12,097 ,, |

VITAL STATISTICS FOR THE WHOLE OF ALGERIA (1882).

Births, 91,562; deaths, 82,296. Increase, 9,266.

FRENCH AND FOREIGNERS IN ALGERIA SINCE 1833.

| | French. | Foreigners. |
|---|---|---|
| 1833 | 3,483 | 4,329 |
| 1845 | 48,274 ,, | 61,126 ,, |
| 1851 | 66,050 ,, | 65,233 ,, |
| 1881 | 195,416 ,, | 189,944 ,, |

POPULATION OF ALGERIA ACCORDING TO NATIONALITIES (1881).

| | |
|---|---|
| Natives (Arabs and Berbers) | 2,842,497 |
| French | 195,419 |
| Naturalised Jews | 35,663 |
| Spaniards | 112,047 |
| Italians | 31,865 |
| Maltese and other British subjects | 15,149 |
| Germans | 3,738 |
| Other Europeans | 18,535 |
| Total | 3,254,913 |

MEAN DISCHARGE OF THE THREE CHIEF RIVERS IN ALGERIA.

| | Area of Basin. | Discharge in Cubic Feet. |
|---|---|---|
| Macta | 4,280 sq. miles | 28,000 |
| Shelif | 15,300 ,, | 50,000 |
| Seybouse | 4,000 ,, | 35,000 |

WELLS SUNK BETWEEN THE YEARS 1856—1883.

| | |
|---|---|
| Total depth | 27,000 yards. |
| Total yield | 3,350,000,000 cubic feet per annum. |

### Wed Rhir.

| | 1882. | 1880. |
|---|---|---|
| Number of oases | 31 | 38 |
| Number of wells | 282 | 434 |
| Yield per second | 220 gals. | 300 (?) |
| Number of date-palms | 360,000 | 518,000 |
| Number of other fruit-trees | 40,000 | 90,000 |
| Value of produce | £96,000 | £220,000 |
| Population | 6,772 | 12,827 |

### Wild Beasts killed in Algeria during the Eight Years from 1872 to 1880.

| | |
|---|---|
| Lions, lionesses, and whelps | 181 |
| Panthers | 988 |
| Hyænas | 1,433 |
| Jackals | 22,619 |

### Coral Fisheries on the La Calle Coast.

1821. Men employed, 2,600; yield, 892 cwts; value, £100,000.
1882. ,, ,, 1,054 ,, 450 ,, ,, £49,000.

### Trade and Shipping of Bona (1883).

Vessels, 1,231; tonnage, 512,709; value of cargoes, £3,400,000.

### Trade and Shipping of Philippeville with Stora (1883).

Vessels, 1,581; tonnage, 649,984; value of cargoes, £26,000.

### Shipping of Collo (1883).

Vessels, 709; tonnage, 136,895.

### Shipping of Jijelli (1883).

Vessels, 454; tonnage, 178,372.

### Shipping of Bona (1883).

Vessels, 459; tonnage, 213,900.

### Trade and Shipping of Algiers (1883).

Entered, 582 vessels; tonnage, 156,290. Cleared, 750 vessels; tonnage, 215,162. Total vessels, 1,332; total tonnage, 371,452.

### Value of Cargoes.

| | |
|---|---|
| Imports | £4,556,000 |
| Exports | 1,634,000 |
| Total | £6,190,000 |

### Shipping of Mostaganem (1883.)

Entered, 127 vessels; tonnage, 61,026. Cleared, 161 vessels; tonnage, 63,168. Total, 288 vessels; tonnage, 124,194. Total, with coasters, 453 vessels; tonnage, 198,196.

### Shipping of Arzeu (1883).

801 vessels; tonnage, 299,752.

### Shipping of Oran and Mers-el-Kebir.

Entered (1875), 323,450 tonnage. Entered (1884), 667,725 tonnage. Total shipping (1883), 4,094 vessels; 1,231,024 tonnage. Fishing smacks, 173; value of the fisheries, £29,000.

### Shipping of Beni-Saf (1883).

643 vessels; tonnage, 366,545.

### Shipping of Nemours (1883).

300 vessels; tonnage, 66,281.

### General Trade of Algeria.

| | Imports. | Exports. | Total. |
|---|---|---|---|
| 1831 | £260,000 | £59,000 | £319,000 |
| 1882 | 16,478,000 | 22,478,000 | 38,956,000 |

### Shipping (1883).

| | | | |
|---|---|---|---|
| Entered | 5,469 | vessels; tonnage | 1,940,465 |
| Cleared | 5,420 | ,, ,, | 1,931,197 |
| Total | 10,889 | ,, ,, | 3,871,662 |

Fishing smacks (1884) 1,060; tonnage, 3,567; crews, 4,464.

FOREIGN SHIPPING ENTERED (1882).

| | | | | |
|---|---|---|---|---|
| French vessels, | 2,280 | ; tonnage | 1,226,607 |
| English | ,, | 513 | ,, | 404,377 |
| Spanish | ,, | 1,747 | ,, | 137,794 |
| Italian | ,, | 647 | ,, | 75,928 |
| Total | ,, | 5,167 | ,, | 1,844,706 |

TRADE OF ALGERIA WITH GREAT BRITAIN.

| | Exports to Great Britain. | Imports from Great Britain. |
|---|---|---|
| 1878 | £357,352 | £168,971 |
| 1882 | 695,224 | 317,492 |

CIVIL COMMUNES IN THE MAZERDA BASIN.

| | Population (1881). |
|---|---|
| Suk-Ahras | 5,961, of whom 3,740 Europeans |
| Tebessa | 3,048 ,, 1,009 ,, |

CHIEF CIVIL COMMUNES IN THE NORTH-EAST AND SEBOUSE BASIN.

| | Population (1881). |
|---|---|
| Bona | 28,536 of whom 20,515 Europeans |
| La Calle, with Um-Thebul | 6,495 ,, 4,826 ,, |
| Guelma, with Ain-Tute | 6,396 ,, 2,453 ,, |
| Wed Zenati, with Ain Regada | 3,581 ,, 405 ,, |
| Randon, with Wed Besbes | 5,478 ,, 505 ,, |
| Duzerville | 3,353 ,, 505 ,, |
| Ain Mokhra | 2,612 ,, 1,495 ,, |

CHIEF CIVIL COMMUNES OF THE SAHEL AND WED-EL-KEBIR BASIN, WITH NEIGHBOURING COASTLANDS.

| | Population (1881). |
|---|---|
| Constantine | 42,721 of whom 24,820 Europeans |
| Philippeville | 18,326 ,, 10,444 ,, |
| Condé-Smendu | 10,992 ,, 508 ,, |
| Bizot | 6,936 ,, 241 ,, |
| El-Khrub | 6,941 ,, 521 ,, |
| Mila | 6,685 ,, 336 ,, |
| Ruffash | 6,533 ,, 418 ,, |
| Wed Atmenia | 5,339 ,, 356 ,, |
| Robertville | 4,875 ,, 636 ,, |
| Jijelli | 4,648 ,, 1,268 ,, |
| Hamma | 4,481 ,, 257 ,, |
| Saint-Arnaud | 3,902 ,, 366 ,, |
| El-Harrush | 3,352 ,, 620 ,, |
| Ulâd Rahmun | 3,389 ,, 299 ,, |
| Gastonville | 2,819 ,, 303 ,, |
| Duquesne | 2,731 ,, 271 ,, |
| El-Kantur | 2,725 ,, 183 ,, |
| Sidi Merwan | 2,531 ,, 437 ,, |
| Saint-Charles | 2,481 ,, 276 ,, |
| Ain-Smara | 2,234 ,, 136 ,, |
| Collo | 2,106 ,, 660 ,, |

CIVIL COMMUNES OF GREAT KABYLIA.

| | Population (1881). |
|---|---|
| Tizi-Uzu | 23,638 of whom 1,101 Europeans |
| Dellys | 13,010 ,, 1,678 ,, |
| Bois-Sacré | 7,232 ,, 304 ,, |
| Rebeval | 5,161 ,, 295 ,, |
| Dra-el-Misan | 2,419 ,, 591 ,, |
| Fort National | 236 ,, 236 ,, |

### Chief Civil Communes of the Isser Basin.

| | Population (1881). | | |
|---|---|---|---|
| Isserville | 5,732 | of whom | 515 Europeans |
| Minerville | 5,704 | ,, | 1,014 ,, |
| Palestro | 2,694 | ,, | 582 ,, |
| Borj-Menaiel | 2,322 | ,, | 603 ,, |

### Communes of the Sahel and Mitija with over 3,000 Inhabitants.

| | Population (1881). | | |
|---|---|---|---|
| Algiers | 70,747 | of whom | 50,567 Europeans |
| Mustapha | 13,556 | ,, | 11,643 ,, |
| Busarea, El-Biar, Saint-Eugène, Hussein-dey | 8,868 | ,, | 6,614 ,, |
| Algiers, with outskirts | 93,171 | ,, | 68,814 ,, |
| Blida | 22,844 | ,, | 7,680 ,, |
| Bufarik | 9,231 | ,, | 4,919 ,, |
| Tondak | 7,035 | ,, | 1,057 ,, |
| Rovigo | 6,173 | ,, | 487 ,, |
| L'Arba | 5,960 | ,, | 1,577 ,, |
| Koleo | 5,439 | ,, | 2,764 ,, |
| Marengo | 4,000 | ,, | 1,868 ,, |
| Muzaiaville | 3,873 | ,, | 1,108 ,, |
| Douera | 3,492 | ,, | 1,909 ,, |
| Souma | 3,477 | ,, | 509 ,, |
| L'Alma | 3,430 | ,, | 829 ,, |
| Sheraga | 3,196 | ,, | 2,292 ,, |
| Rivet | 3,165 | ,, | 400 ,, |
| Maison-Carrée | 3,031 | ,, | 1,753 ,, |

### Chief Civil Communes of the Dahra District.

| | Population (1881). | | |
|---|---|---|---|
| Guraia | 23,865 | of whom | 236 Europeans |
| Shershell | 7,785 | ,, | 2,174 ,, |
| Tenes | 4,744 | ,, | 1,643 ,, |
| Montenotte | 3,336 | ,, | 291 ,, |

### Chief Communes of the Sheliff Basin.

| | Population (1881). | | |
|---|---|---|---|
| Department of Algiers— | | | |
| Medea | 15,391 | of whom | 6,128 Europeans |
| Orléansville | 8,242 | ,, | 2,585 ,, |
| Miliana | 6,901 | ,, | 2,812 ,, |
| Duperré | 5,710 | ,, | 833 ,, |
| Teniet-el-Haad | 3,342 | ,, | 171 ,, |
| Saint-Cyprien des Attaf | 3,084 | ,, | 694 ,, |
| Affreville | 2,666 | ,, | 792 ,, |
| Boghar | 2,501 | ,, | 603 ,, |
| Boghari | 2,110 | ,, | 322 ,, |
| Department of Oran— | | | |
| Mostaganem | 13,422 | ,, | 6,774 ,, |
| Relizane | 5,402 | ,, | 2,973 ,, |
| Pont du Sheliff | 3,565 | ,, | 183 ,, |
| Abukir | 2,698 | ,, | 454 ,, |

### Chief Communes of the Western Tell.

| | Population (1881). | | |
|---|---|---|---|
| Oran | 50,377 | of whom | 47,261 Europeans |
| Tlemcen | 25,370 | ,, | 10,033 ,, |
| Ain-Temushent | 5,518 | ,, | 3,635 ,, |
| Beni-Saf | 4,862 | ,, | 2,770 ,, |
| Misserghin | 4,496 | ,, | 3,148 ,, |
| Nemours | 2,727 | ,, | 1,749 ,, |
| Nedroma | 20,453 | ,, | 381 ,, |

COMMUNES AND CHIEF TOWNS OF AURES, HODNA, THE ORAN PLATEAUX, AND ALGERIAN SAHARA.

| | | Population (1881). | | |
|---|---|---|---|---|
| PROVINCE OF CONSTANTINE— | | | | |
| | Biskra | 7,085 | of whom | 324 Europeans |
| | Batna | 3,846 | ,, | 1,235 ,, |
| | Msila | 2,845 | ,, | 26 ,, |
| | Tugurt | 6,000 | | — |
| Suf District | El-Wed | 9,000 | | — |
| | Guemar | 4,440 | | — |
| | Kuinin | 2,890 | | — |
| PROVINCE OF ALGIERS— | | | | |
| | Bu-Sada (mixed commune) | 5,112 | of whom | 75 Europeans |
| | Jelfa ,, ,, | 842 | ,, | 176 ,, |
| | Laghwat | 3,808 | ,, | 87 ,, |
| Msab District | Ghardaya (mixed commune) | 10,428 | | — |
| | Beni-Isguen ,, | 4,695 | | — |
| | Berrian ,, | 4,440 | | — |
| | Guerara ,, | 2,940 | | — |
| | Melika ,, | 1,760 | | — |
| | El-Atef ,, | 1,670 | | — |
| | Bu-Nura ,, | 1,190 | | — |
| | Wargla | 2,000 | | — |
| | El-Golea | 1,575 | | — |
| PROVINCE OF ORAN— | | | | |
| | Géryville (mixed commune) | 832 | | — |

POPULATION OF THE THREE PROVINCIAL CAPITALS (1881).

| | |
|---|---|
| Algiers | 65,227 |
| Oran | 53,500 |
| Constantine | 33,450 |

RETURNS OF THE GENEVESE COLONISATION COMPANY, SETIF (1884).

Domain, 39,000 acres, of which 2,750 fallow.
Value of the estate, £220,000.
Revenue for the year 1884, £17,530.
Population, 4,982 Natives; 265 Europeans; total, 3,247.

RETURNS FOR THE TLEMCEN DISTRICT (1880).

| | |
|---|---|
| Orange groves | 30 acres |
| Olive ,, | 1,170 ,, |
| Gardens and orchards | 1,625 ,, |
| Vineyards | 1,135 ,, |
| Total under cultivation | 3,960 acres |

RETURNS FOR THE WARGLA OASIS (1880).

| | |
|---|---|
| Palm groves (number of trees) | 454,306 |
| Palms yielding fruit | 160,000 |
| Native artesian wells | 395 |
| Ordinary wells | 600 |
| Yearly yield of dates (tons) | 7,000 |

EXTENT OF FORESTS IN THE TELL DISTRICT (1884).

| | |
|---|---|
| State forests | 3,506,000 acres |
| Communal and tribal forests | 730,000 ,, |
| Private forests | 748,000 ,, |
| Total State forests in Algeria | 4,315,000 ,, |
| Olives grafted by Europeans (1877) | 500,000 |
| ,, ,, natives ,, | 1,200,000 |
| Oil imported (1882) | 3,000 quintals |
| ,, exported ,, | 360 ,, |

Cork exported (1881), 3,850 tons; value, £135,000.

ORANGE GROVES OF BLIDA.

1,000 acres; average yield, 40,000,000 oranges; value, £32,000.

### Mining Industry.

Mines open (1882), 37; hands employed, 3,080.
Yield of the Beni-Saf mines (1883): 264,804 tons of iron ores.

### Date Palms in Algeria (1880-1884.)

| | | | |
|---|---|---|---|
| Hodna | 20,000 | Wargla | 600,000 |
| El-Kantara | 76,000 | Laghwat and Mzi | 42,000 |
| Ziban | 556,000 | Wed Jeddi | 100,000 |
| Biskra | 150,000 | Mzab | 193,000 |
| Wed Righ | 592,000 | Methili | 17,000 |
| Tugurt | 170,000 | El-Golea | 16,000 |
| Sûf | 180,000 | South Oran | 20,000 |

Total revenue of the palm groves . . . . . £1,120,000

### Cereals in Algeria.

Land under crops . . . . . 8,750,000 acres
Total yearly value (about) . . . . . £1,100,000

### Export of Alfa Grass, chiefly to England.

| | |
|---|---|
| 1859 | 10,500 metric quintals |
| 1869 | 90,000 ,, |
| 1870 | 370,000 ,, |
| 1885 | 800,000 ,, |

### Viticulture.

| | | | | |
|---|---|---|---|---|
| 1859 | Vineyards, | 2,000 acres; | Yield, | 1,500,000 gallons |
| 1864 | ,, | 29,000 ,, | ,, | 16,000,000 ,, |
| 1876 | ,, | 42,000 ,, | ,, | 55,000,000 ,, |
| 1882 | ,, | 100,000 ,, | ,, | 170,000,000 ,, |
| 1884 | ,, | 150,000 ,, | ,, | 224,000,000 ,, |
| 1885 | ,, | 250,000 ,, | ,, | 598,000,000 ,, |

Europeans employed on the Vineyards (1882) . . . . . 10,368
Natives ,, ,, ,, ,, . . . . . 12,736

### Export of Animals and Animal Produce (1882.)

| | | |
|---|---|---|
| Sheep | 546,983 | Value, £437,000 |
| Cattle, &c. | 34,532 ,, | 250,000 |
| Wool | 53,000 cwts. ,, | 166,000 |
| Skins, hides, &c. | 95,000 ,, ,, | 180,000 |
| Fish | 40,650 ,, ,, | 107,000 |
| Coral | 1,500 ,, ,, | 76,000 |
| Other products | — | 13,000 |
| Total value . . . | | £1,229,000 |

Mineral springs frequented (1884), 47; visitors, 5,640.

### Live Stock.

| | 1881 | 1888 |
|---|---|---|
| Horses | 149,045 | 139,552 |
| Mules | 127,382 | 133,216 |
| Asses | 205,422 | 210,112 |
| Cattle | 1,111,955 | 1,027,913 |
| Camels | 216,535 | 154,248 |
| Sheep | 5,994,895 | 5,142,321 |
| Goats | 3,144,148 | 3,056,660 |
| Pigs | 60,318 | 45,660 |
| Total | 11,008,603 | 9,909,867 |
| Beehives | | 170,713 |

European rural population (1881), 146,657.

### Agricultural Stock (1882).

| | Owned by Europeans. | Owned by Natives. | Total. |
|---|---|---|---|
| Ploughs | 35,841 | 251,440 | 287,281 |
| Carts and waggons | 20,257 | 865 | 21,122 |
| Other implements | 32,513 | 2,137 | 34,649 |
| Total | 88,610 | 254,442 | 343,052 |
| Value | £593,000 | £167,000 | £760,000 |

### European Colonisation.

Lands granted to settlers (1871 to 1882), 1,190,000 acres.
Resident settlers (1882), 24,455, of whom 3,886 were immigrants.

### Purchase of Rural Lots (1877 to 1882).

| | | |
|---|---|---|
| Land bought by Europeans from natives | 438,000 | acres |
| ,, ,, natives from Europeans | 32,000 | ,, |
| Total | 470,000 | ,, |
| Total lands owned by Europeans (1881) | 2,702,000 | ,, |
| Average size of holdings per head | 18 | ,, |

### Live Stock Captured from the Natives (1830—1845).

| | |
|---|---|
| Sheep | 18,720,000 |
| Horned cattle | 3,605,000 |
| Camels | 917,320 |
| Total | 23,241,320 |

### Roads and Railways.

Carriage roads open (1832), 6,300 miles; outlay, £2,800,000.

| | |
|---|---|
| Railways open (1885) | 1,080 miles |
| Capital invested | £18,000,000 |
| Receipts (1882) | £624,000 |

### Telegraph System (1882).

Mileage, 3,645; wires, 8,678 miles.

### Communal Divisions of Algeria (1884).

| | | Area in acres. | Population. |
|---|---|---|---|
| Civil Department | Civil Communes with full rights | 4,788,000 | 901,689 |
| | ,, ,, mixed | 21,860,000 | 1,369,178 |
| Military Department | Mixed Communes | 7,770,000 | 47,292 |
| | Native ,, | 87,290,000 | 436,773 |
| | Total | 122,508,000 | 3,254,932 |

### Representation—Parliamentary Electors (1885).

| | | | |
|---|---|---|---|
| Department of Algiers | 22,338 | of whom 14,985 | voted |
| ,, Constantine | 17,478 | ,, 11,700 | ,, |
| ,, Oran | 18,521 | ,, 11,876 | ,, |
| Total | 58,337 | ,, 38,561 | ,, |

### Municipal Electors (Algiers), 1884.

| | |
|---|---|
| French | 20,686 |
| Mohammedans | 18,046 |
| | 38,732 |

### Finance.

| | |
|---|---|
| Receipts (1883) | £1,630,000 |
| Communal Budget (1880) | £720,000 |

### Public Worship.

Roman Catholics, 310,000; expenditure, £36,800. Protestants, 7,500; expenditure, £3,200. Mohammedans, 2,842,497; expenditure, £8,550. Total, 3,160,997; expenditure, £48,750.

### Public Instruction (1882).

| | | |
|---|---|---|
| Primary Schools in civil territory | 726, | of which 542 secular, 184 religious |
| Franco-Arab schools | 21 | |
| Jewish schools | 8 | |
| Total | 755 | |

### Attendance at the Primary Schools.

| | Boys. | Girls. | Total. |
|---|---|---|---|
| French | 12,553 | 14,095 | 26,648 |
| Jews | 5,906 | 4,633 | 10,539 |
| Foreigners | 6,617 | 6,670 | 13,307 |
| Mohammedans | 2,814 | 358 | 3,172 |
| Total | 27,890 | 25,756 | 53,666 |

ATTENDANCE AT THE PRIMARY SCHOOLS—*continued.*

| | | | | |
|---|---|---|---|---|
| Franco-Arab schools in the military divisions | 0 | Attendance | 474 |
| Musulman ,, ,, ,, | 369 | ,, | 4,426 |
| Infant asylums | 197 | Inmates | 20,997 |
| Total | 575 | | 25,897 |

Secondary schools, 13; attendance, 3,771.

HIGHER SCHOOLS AND COLLEGES.

| | | | | | |
|---|---|---|---|---|---|
| School of Medicine | 66 | Europeans and Jews | 5 | Musulmans |
| ,, Law | 304 | ,, ,, | 28 | ,, |
| ,, Letters | 124 | ,, ,, | 4 | ,, |
| ,, Science | 28 | ,, ,, | 0 | ,, |
| Total | 522 | ,, ,, | 37 | ,, |

ALGERIAN ARMY (1882).

| Departments. | Officers. | Privates. | Total. | Horses. |
|---|---|---|---|---|
| Algiers | 884 | 19,996 | 20,830 | 5,941 |
| Oran | 949 | 18,917 | 19,866 | 5,476 |
| Constantine | 766 | 18,852 | 19,618 | 4,829 |
| Total | 2,549 | 57,765 | 60,314 | 16,246 |

CONSCRIPTION (1880).

| | |
|---|---|
| French | 1,589 |
| Naturalised Jews | 393 |
| Spaniards | 345 |
| Total | 2,327 |

MILITARY DIVISIONS.

| Departments. | Sub-divisions. | Departments. | Sub-divisions. | Departments. | Sub-divisions. |
|---|---|---|---|---|---|
| ALGIERS | Algiers, Aumale, Medea, Orleansville, Dellys | ORAN | Oran, Mascara, Tlemcen | CONSTANTINE. | Constantine, Bona, Batna, Setif |

SENTENCES OF COURT-MARTIALS (1882).

| | |
|---|---|
| Condemned to death (1 execution) | 36 |
| ,, hard labour | 246 |
| ,, penal servitude | 5 |
| ,, imprisonment, &c. | 1,221 |
| Acquitted | 360 |
| Soldiers undergoing sentence | 3,309 |

PROCEEDINGS OF THE CIVIL AND CRIMINAL COURTS (1883).

| | |
|---|---|
| Lawsuits of all kinds | 22,037 |

SENTENCES OF THE TRIBUNALS.

| | |
|---|---|
| Condemned to death (5 executed) | 49 |
| ,, hard labour | 255 |
| ,, imprisonment | 20,059 |
| ,, fines | 53,347 |
| Acquittals | 5,625 |

CIVILIANS UNDERGOING SENTENCE (1882).

| | | |
|---|---|---|
| French | 564 | or 12 per cent. |
| Other Europeans | 284 | ,, 6 ,, |
| Jews | 80 | ,, 2 ,, |
| Mohammedans | 3,643 | ,, 80 ,, |
| Natives detained in the penitentiaries | 140 | |

ADMINISTRATIVE DIVISIONS OF ALGERIA, WITH THE CHIEF TOWNS OF COMMUNES HAVING OVER ONE THOUSAND INHABITANTS.

| Departments. | Arrondissements. | Communes. |
|---|---|---|
| CONSTANTINE: | Bona | Bona, La Calle |
| | Bougie | Bougie, Jijelli |
| | Batna | Batna, Biskra |
| 7 Arrondissements | Constantine | Constantine, Mila, Tebessa, Condé-Smendu |
| 66 Civil Communes | | |
| 32 Mixed ,, | Guelma | Guelma, Suk-Ahras |
| 7 Native ,, | Philippeville | Philippeville, Stora, Jemmapes, Collo |
| | Setif | Setif, Borj, Bu-Arreig, Saint-Arnaud |
| ALGIERS: | Algiers | Algiers, Mustapha, Saint-Eugène, Blida, Bufarit, Sherahell, Koleo, Menerville, Duera, Maison-Carrée, Hussein-dey, Marengo, Aumale, Arba |
| 5 Arrondissements | | |
| 82 Civil Communes | Medea | Medea, Boghari |
| 29 Mixed ,, | Miliana | Miliana, Teniet-el-Haad, Affreville |
| 4 Native ,, | Orleansville | Orleansville, Teneo |
| | Tizi-uzu | Tizi-uzu, Dellys |
| ORAN: | Mascara | Mascara, Frenda |
| | Mostaganem | Mostaganem, Relizane |
| 5 Arrondissements | Oran | Oran, Saint-Denis-du-Sig, Ain-Temushent, Saint-Leu, Arzeu, Tiaret, Saint-Cloud, Perrégaux, Mers-el-Kebir, Misserghin, Saint-Barbe-du-Tlelat |
| 63 Civil Communes | | |
| 23 Mixed ,, | | |
| 3 Native ,, | Sidi-bel-Abbes | Sidi-bel-Abbes, Tessala |
| | Tlemcen | Tlemcen, Nedroma, Nemours |

BOARD OF NATIVE AFFAIRS.

| Directions. | Sub-divisions. | Circles and Annexes. |
|---|---|---|
| CONSTANTINE | Tebessa | |
| | Batna | Batna, Biskra, Barika, Khenchela, La Calle, Suk-Ahras |
| | Bona | |
| | Mila | |
| | Setif | |
| ALGIERS | Aumale | Aumale, Bu-Sada |
| | Medea | Boghar, Jelfa, Laghwat, Shellala, Ghardaya |
| ORAN | Daya | Mascara, Ain-Sefra, Géryville, Tiaret, Saida |
| | Mascara | Afiu |
| | Tlemcen | Lalla-Maghnia, Sebdu |

## MAROCCO.

| | |
|---|---|
| Area | 206,130 square miles. |
| Approximate population | 8,000,000 to 9,000,000 |
| Population according to Rohlfs | 2,750,000 |

TEMPERATURE AT MOGADOR.

| | |
|---|---|
| August, hottest month | 70° Fahr. |
| February, coldest ,, | 61° ,, |
| Mean for the year | 67° ,, |
| Maximum heat recorded | 88° ,, |
| Minimum ,, | 50° ,, |

TRADE OF TETUAN (1883), £43,000.

TRADE AND SHIPPING OF TANGIER (1883).
Vessels, 564; Tonnage, 96,028.

| | |
|---|---|
| Imports | £295,000 |
| Exports | 199,650 |
| Total | £494,650 |

TRADE AND SHIPPING OF EL-ARAISH.

Vessels, 149; tonnage, 25,619; value of cargoes, £47,000.

TRADE AND SHIPPING OF REAR-SLA (1883).

Vessels, 69; tonnage, 21,684; value of cargoes, £89,000.

TRADE AND SHIPPING OF CASABLANCA (1883).

Vessels, 125; tonnage, 68,150; value of cargoes, £268,000.

TRADE AND SHIPPING OF MAZAGAN (1883).

Vessels, 116; tonnage, 56,226; value of cargoes, £912,000.

TRADE AND SHIPPING OF ASFI (1883).

Vessels, 60; tonnage, 24,095; value of cargoes, £87,250.

TRADE AND SHIPPING OF MOGADOR (1883).

Vessels, 62; tonnage, 42,999; value of cargoes, £220,150.

TRADE OF MOROCCO (1883).

| | |
|---|---|
| Imports | £805,000 |
| Exports | 694,000 |
| Total | £1,499,000 |

TRADE OF MOROCCO WITH FRANCE (1884).

| | |
|---|---|
| Imports | £280,000 |
| Exports | 111,000 |
| Total | £391,000 |

TRADE OF MOROCCO WITH GREAT BRITAIN.

| | Exports to Great Britain. | Imports from Great Britain. |
|---|---|---|
| 1878 | £391,369 | £191,292 |
| 1879 | 154,270 | 245,037 |
| 1880 | 350,564 | 246,584 |
| 1881 | 246,051 | 270,292 |
| 1882 | 277,465 | 210,685 |

SHIPPING OF MOROCCO (1883).

1,130 Vessels; tonnage, 322,625.

LIVE STOCK (Approximate Estimate).

| | |
|---|---|
| Sheep | 40,000,000 |
| Goats | 11,000,000 |
| Oxen | 5,500,000 |
| Asses and mules | 4,000,000 |
| Horses | 500,000 |
| Camels | 500,000 |
| Total | 61,500,000 |

FINANCE (1880).

| | |
|---|---|
| Imperial revenue | £506,000 |
| Estimated expenditure | 212,000 |

ADMINISTRATIVE DIVISIONS AND CHIEF TOWNS OF MOROCCO, WITH APPROXIMATE POPULATIONS.

| Amalat. | Chief Towns. | Population. | Amalat. | Chief Towns. | Population. |
|---|---|---|---|---|---|
| UJDA | Ujda | 8,000 | FUM-EL-GHARB | Meknes | 25,000 |
| TAZA | Taza | 3,500 | | Zerhun | 6,000 |
| | Debdu | 2,000 | | Sefru | 3,000 |
| TETUAN | Tetuan | 22,000 | | Azemmur | 3,000 |
| TANJA | Tangier | 20,000 | ARBAOUA | Casablanca | 7,000 |
| | Shesshawen | 3,500 | | Mazagan | 2,500 |
| GHARB-EL-ISAB | El-Araish | 4,000 | TADLA | Kasbah Beni-Mellal | 3,000 |
| | Kasr-el-Kebir | 5,500 | DEMNATA | Demnata | 3,000 |
| | Wezzan | 3,000(?) | MARRAKESH | Marrakesh (Morocco) | 50,000 |
| | Fez | 70,000 | HAHA | Mogador | 18,000 |
| RBAT (RABAT) | Rbat Sla | 35,000 | ASFA | Asfi | 3,000 |

VASSAL OR INDEPENDENT STATES.

| Amalat. | Chief Towns. | Population. | Amalat. | Chief Towns. | Population. |
|---|---|---|---|---|---|
| RIF | Tafersit | — | WED-DRAA | Tamagrut | — |
| WED-SUS | Tarudant | 8,300 | | Beni-Sbih | — |
| TAZERBULT | Ilegh | — | TAFILELT | Es-Zerigat | 4,000 |
| WED-MIN | Fumel-Hossan | — | | Abuam, Er-Rissani | — |
| | Ogulmin | — | KENATSA | Kenatsa | 2,000 |
| | | | FIGUIG | Zenaga | 5,000 |

SPANISH POSSESSIONS.

| | | | |
|---|---|---|---|
| Melilla | 3,000 | Ceuta | 7,000 |

## THE SAHARA.

| | |
|---|---|
| Approximate area | 2,500,000 square miles |
| ,, population | 500,000 |

MAIN DIVISIONS, WITH APPROXIMATE POPULATIONS.

| | |
|---|---|
| Ennedi, Tibesti, Wajanga | 50,000 |
| Borku | 12,000 |
| Kawar and neighbouring Oases | 5,000 |
| Air | 100,000 |
| Territory of the Northern Tuaregs | 30,000 |
| Territory of the Southern Tuaregs (Awellimiden, North of the Niger) | 45,000 |
| Twat Oases, Wed Saura Basin, and tributary valleys | 120,000 |
| Western Sahara | 25,000 |
| Total | 387,000 |

SUPERFICIAL AREA, WITH TRIPOLITANA AND THE MAURITANIAN SAHARA.

| | | |
|---|---|---|
| Hamadas and serirs | 1,440,000 | square miles. |
| Mountainous and rocky districts | 800,000 | ,, |
| Steppes and pastures | 600,000 | ,, |
| Sandy wastes | 340,000 | ,, |
| Oases and cultivable lands | 80,000 | ,, |
| Total | 3,260,000 | ,, |

TOWNS AND SETTLEMENTS IN THE TWAT OASES AND SAURA BASINS, WITH APPROXIMATE POPULATIONS.

| | Population. |
|---|---|
| Karsas (Wed Saura) | 2,000 |
| Ulad-Raffa | 2,000 |
| Sherwin (Gurara District) | 1,300 (?) |
| Shavef and Sidi Amoar Zawya | 2,000 (?) |
| Brinken (Tsabit District) | 3,000 |
| Adrar | 2,500 |
| Tamentit | 6,000 |
| Taurirt | 3,000 |
| Tillulin | 3,000 |
| Kasr-el-Arb (Insalah) | 1,500 |

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